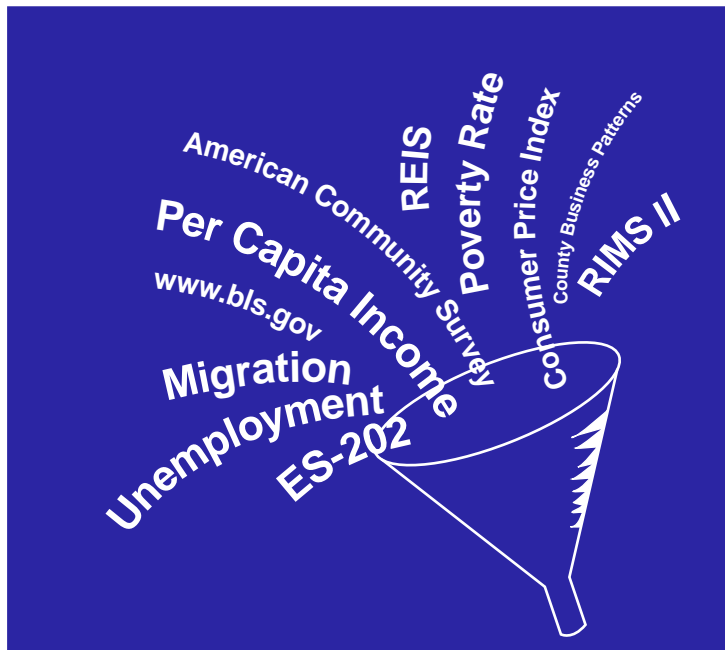


# Socioeconomic Data for Understanding Your Regional Economy

A User's Guide

**Joseph Cortright**  
**Andrew Reamer**

1998



Economic Development Administration  
U. S. Department of Commerce

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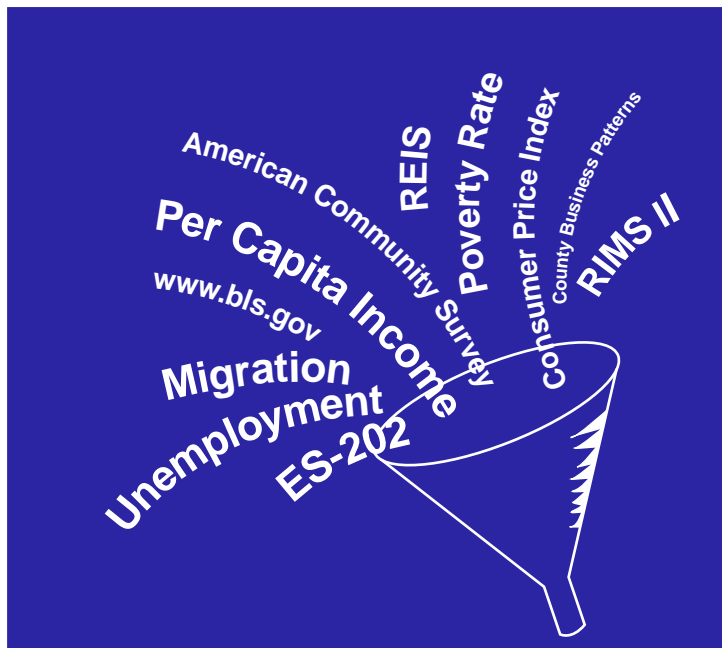
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The legal stuff: This publication has been prepared as a resource for socioeconomic data users and analysts and has not been sanctioned or endorsed by any federal agency or other organization listed here. Information has been compiled from sources deemed to be accurate. This report is based on sources of information available and known as of December 1998. The availability and scope of information, and in particular the specific addresses of information available over the Internet, are subject to change without notice. Andrew Reamer & Associates and Impresa make no representations as to the completeness, reliability, or accuracy of the sources presented here or to the data contained in the databases referred to therein.

# Socioeconomic Data for Understanding Your Regional Economy: A User's Guide

## Introduction

### *Why a guide?*

You work for a local economic development agency for a living. Or you look into the workings of the regional economies across your state for a university business research center. Or you are a graduate student wanting to get a handle on the how-to of regional economic analysis.

If your aim is to understand, explain or have some positive impact on a regional economy, you need to find, and make sense of, pertinent *socioeconomic data*. As an economic development practitioner or researcher, your effectiveness is fairly limited unless you can frame what's going on in the economy, and your basic tool for framing is some level of data analysis. Anecdotes and stories from the field, while useful, can take you only so far.

Now if you have any experience in socioeconomic data analysis, you know that regional data come from a wide, wide array of sources. Most of these sources have some connection to the federal government, but the federal government is a very big place. Regional data are produced by the U.S. Bureau of the Census, your state labor market information agency (courtesy of funding by the U.S. Bureau of Labor Statistics), the U.S. Bureau of Economic Analysis, the National Science Foundation, and about 65 other federal agencies. Most of these agencies publish a number of data series, measuring various dimensions of economic activity and well-being. Then, of course, there are private data sources, some of which try to add value to the federal data, and some of which collect their own data and publish them, often at a hefty fee.

Knowing what data exist, where to find them, and what they mean can be a daunting task. The federal government's system for collecting, organizing, and publishing regional socioeconomic data is decentralized, complex, and idiosyncratic. The burden is on data users to find their way through the system. While help can be found, through State Data Centers and reference librarians, for example, the system is fairly intimidating to the uninitiated, and can be confusing even to those who have worked with it for years.

Of course, once you get the relevant data, you have to know what to do with them, how to transform rows and columns of statistics, often from several sources covering various time periods and differing geographies, into an integrated, meaningful picture of the dynamics of the regional economy of interest. While some graduate planning programs

teach their students the art of economic analysis, the large majority of economic development practitioners and researchers have not had the benefit of access to such instruction.

When it comes to the sources and uses of regional socioeconomic data, the fact is that most analysts are self-taught, perhaps with a little help from a more experienced person, if they're lucky. However the learning proceeds, it tends to be fairly informal. And, given the complexity of the federal data system and the lack of good sources of how-to, many would-be learners of the art of economic analysis are unable to get as far as they might like.

The Economic Development Administration (EDA) has a vital interest in aiding practitioners and researchers in understanding the sources and uses of regional socioeconomic data. EDA also has a significant interest in seeing that analysts have access to accurate, detailed, and timely data, particularly from the federal government. As a result, the agency awarded a grant to the authors to assess the extent to which the federal data system currently meets the needs of regional development analysts, and to provide analysts with information useful in helping them navigate the complexities of that system.<sup>1</sup> The result of this effort is two documents. The first, based on a nationwide survey and a series of focus groups and interviews, describes data user perceptions regarding the strengths and weaknesses of the current data system and provides recommendations for improvements.<sup>2</sup>

The second product is this *User's Guide*, drawn both from project findings and the authors' own experience. Its purpose is to help fill the information gaps described earlier – to provide the reader with an overview of the sources of data for measuring the health and structure of local economies, and to describe methods and best practices for analyzing and interpreting these data. The guide is not meant to be comprehensive in breadth and depth, as a textbook might. Rather, it seeks to provide a general grounding in sources and uses, and identify the resources on which the motivated data user might draw to continue moving up the professional learning curve.

### ***Who should use this guide? What will it help you do?***

This guide is designed for people who want to use readily available socioeconomic data to describe activities and trends in subnational economies, typically at a state, regional, or local level. Its intended audience is broad, and includes novices and the more experienced, researchers and development practitioners, public agency staff, and private sector consultants and market analysts. Various chapters should be useful to data users

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<sup>1</sup> EDA's interest in awarding this grant stemmed from the findings of an EDA-sponsored study on the appropriate role of the federal government in economic development. See National Academy of Public Administration, *A Path to Smarter Economic Development* (Washington, DC: November 1996).

<sup>2</sup> Andrew Reamer and Joseph Cortright, *Assessment of Socioeconomic Data for Regional Economic Analysis*, January 1999. Copies are available from the Research and National Technical Assistance Division, Economic Development Administration, (202) 482-4085.

involved in a wide variety of analytic activities, including impact assessment, regional measurement, strategic planning, and program design.

A wealth of statistical information is available about economic activity for cities, counties, and states, much of it free or at very low cost. This guide helps you find the type of data you need through:

- describing the outlines of the regional data system, including the activities of key federal statistical agencies;
- providing useful descriptions of key data series covering important dimensions of socioeconomic activity; and
- pointing you to an array of data intermediaries ready and able to assist in finding the data you need.

Using the input of our project participants, the guide also offers a series of specific suggestions that you might use to improve the impact of your analytic efforts. We point out the work habits of effective analysts, recommend a number of data books and Web sites you might get to know, and point out some regularly occurring hazards in the process of data analysis.

### ***Plan of the User's Guide***

Though some readers may find the *User's Guide* a cover-to-cover page-turner, we've designed it to be used as a reference work, allowing you to move back and forth according to your interest and needs at the moment. To make sure that important information can be found promptly, we repeat references to essential resources in various sections.

The guide is divided into two parts. The first, composed of four chapters, covers the basics:

- Chapter One lays out foundation tools for obtaining and effectively using socioeconomic data. This discussion is primarily aimed at data novices, so if you're experienced and well-equipped you can skip this chapter.
- Chapter Two gives an overview of the U.S. system for producing regional socioeconomic data, and a quick tour of the various agencies and organizations responsible for gathering, compiling, and disseminating the data.
- Chapter Three describes key sources of regional data across eight dimensions of socioeconomic activity, such as employment and unemployment, income and earnings, and the cost of living. For each dimension, background regarding definitions and measurement

approaches are provided, then 3–6 data sources are discussed in terms of the type of geography covered, frequency of publication, method of collection, means to access, and point of contact.

- Chapter Four provides a list of data intermediaries which can help you find your way through the information jungle. Data intermediaries like Census Data Centers and state labor market information agencies can connect you to the disparate resources available, saving time and effort.

Part Two offers practical advice useful to a wide range of practitioners. The observations and suggestions presented are drawn directly from the experiences of a national sample of data users who participated in the EDA-sponsored project described earlier:

- Chapter Five distills the common and uncommon knowledge of analysts into a series of best practices.
- Chapter Six lists bookshelf basics – those statistical and information resources that economic analysts find valuable to have in their print and electronic libraries.
- Chapter Seven points out the best Web sites for socioeconomic data analysis.
- Chapter Eight describes the common pitfalls and frustrations that analysts confront in their day-to-day work.
- Chapter Nine offers an overview of some advanced techniques that analysts use to understand their local economies.

The appendices include lists of two key sets of contacts for each state, the lead agency of the Census State Data Center program, and the labor market information (LMI) agency. As we will suggest a number of times, these experts can be of great assistance in finding and making sense of the data you need.

As a complement to the *User's Guide*, we have prepared a Web site specifically designed as a resource for regional economic analysts. The site provides links to each of the major on-line sources of socioeconomic data referred to in this report, as well as links to dozens of other sources of more specialized information. You can find this Web page at <http://www.econdata.net>.



# ***Part One: The Basics***

## **Chapter 1**

### **Tools of the Trade**

In this chapter, we describe the tools that every analyst should have. The chapter primarily will be of interest to novice data users, so if you have some experience, you may want to skip ahead to the next chapter.

Most analysts employ a few basic tools to characterize the local economy using economic data. The data are out there. It's a matter of being properly equipped to find them, bring them home, and figure out what they mean. These key tools include:

- means to connect to data professionals;
- modest computing power;
- a working definition of your regional economy; and
- a few analytic techniques.

In addition to these basic tools, good analysts also carry around a healthy perspective on the limitations of data – what they can and can't tell you.

#### ***1.1 Tools for Connecting to Data Professionals***

Chances are, you're not the first person who's given thought to assembling or analyzing data about the economy in your state or region. As others have tread this path before (or at least know the general terrain), it's best to take advantage of their efforts. Two of the most useful tools for doing so aren't very high tech at all – the telephone and the copying machine. We recommend that you call (or visit) your state labor market information (LMI) agency, your Census State Data Center, and the closest Federal Depository reference library. Getting to know these organizations and their data resources, and learning how to access those resources, is an important first step for those just starting out in the field of regional economic analysis. (In Appendices A and B, we provide information on how to contact your state's lead State Data Center and LMI agency. You can find the nearest Federal Depository library by calling the reference librarian in your local library or visiting [http://www.access.gpo.gov/su\\_docs/libpro.html](http://www.access.gpo.gov/su_docs/libpro.html) on the Web.)

#### ***1.2 Modest Computing Power***

The advent of the personal computer has given data analysts vastly increased power to assemble and manipulate economic statistics. With the expansion of the World Wide Web, enormous amounts of data are available to anyone with the right hardware, software, and a little time. The critical tools are as follows:

- *Spreadsheet software:* Any competent spreadsheet software program such as Lotus 1-2-3, Quattro Pro, or Excel will do. All of these programs have sufficient statistical power and graphing capabilities for the work you'll need to do.
- *An Internet connection:* As we discuss below, access to the Internet is the best, and for some data sources the only, way to get the data you'll need on your local economy. A dial-up account with a local Internet Service Provider, a modest modem, and Web browser software should be all you need. Obviously, a faster connection is better, but nearly all of the data sets you're likely to need can be downloaded (with patience) with a 14.4K modem.
- *A CD-ROM drive:* Some of the most useful data series are now available on CD-ROM, a data delivery tool that can be more comprehensive and convenient than an Internet connection. Some data sources, such as private business directories, are available only on CD-ROM.

### **1.3 Working Definition of Your Regional Economy**

Regional economic activity pays little attention to domestic political boundaries, crossing them at will. If you're interested in the well-being of residents of one political jurisdiction, like a city or a county, or some neighborhood or district within a political jurisdiction, chances are good that your area of interest is part of a larger regional economy. (Typically, we have found, it's difficult to describe anything smaller than a county, and more often a group of counties or a metropolitan area, as constituting a functioning economy.)

It's hard, and not particularly useful, to look at your particular area of interest without having some understanding of the workings of your regional economy and the place of your jurisdiction within that. To determine the boundaries of your economic region, you can work with the data professionals at the state LMI agency or Census State Data Center. You are then in a position to seek out data at both the regional and local level.

### **1.4 A Few Analytic Tools**

"Ninety-nine percent of the time the most powerful statistical technique I use is long division." (A national economic development consultant)

Once you get the data, you have to figure out what to do with them. As the above quote suggests, most analytic work does not require major league statistical analysis – least squares regression and the like. If you were good in high school math, you're in business.

But even if the math is not that advanced, how to prepare good analytic work is not immediately obvious. It is more art than science, and in more ways than one. You need to know which data are important, in light of your assignment, and which are not. There is a multitude of data out there, more every day courtesy of the Internet. You want to avoid being overwhelmed, and pick the wheat and avoid the chaff, so to speak. Chapter Three has been prepared to help you make good choices.

Moreover, you need to know how to analyze and organize from a wide and disparate variety of data sources to tell a coherent, internally consistent, truthful story about your economy, first to yourself, then to your audience. In economic analysis, story-telling is a critical art. Good analysis is not about collecting and organizing data and doing a show and tell. It is about analyzing data and integrating the findings to develop themes, patterns and conclusions that inform decision makers and other readers. The burden of making sense of the data should be on you, not your audience.

There are two types of knowledge in the world – explicit and tacit. **Explicit** knowledge can be very easily conveyed from one person to the next. Socioeconomic data are a great example of explicit knowledge – numbers are placed on a page or Web site, and we all can see them. In contrast, the development of **tacit** knowledge relies primarily on “learning by doing,” and so is not easily conveyed by explicit means. For example, when you get down to it, how well one wields a paintbrush or hits a baseball is largely a function of innate skill and learning by doing. The art of regional economic analysis requires a base of tacit knowledge that includes a sense of knowing what data are important, how to analyze them, and how to piece together what you found into a coherent story. These skills can be enhanced by teaching, but they are mainly developed by doing.

Which brings us back to the analytic tools for doing, the paint brush and the baseball bat, as it were. In economic analysis, the two simplest tools are time series analysis and cross-sectional comparisons. **Time series analysis**, as the name implies, involves plotting data trends over time for one or more geographic areas or other units (e.g., industries) of analysis. Visually, time series are usually shown in line graphs. Options for the nature of the plot include nominal data (i.e., the actual numbers), percentage change over time from some base year (e.g., where the base year figure is converted to 100), and the ratio between two figures (e.g., a state’s per capita income as a percentage of the national figure). Time series analysis provides the basis for understanding how an economy is evolving over time, and in relation to other areas.

If time series tracks trends over time, **cross-sectional analysis** examines the distribution of one variable by other variables at one point in time. Typical visual tools include bar graphs and pie charts. Examples of cross-sectional analysis include the distribution of jobs by industry, of population by race, and of income by source. Cross-sectional analysis allows us to understand the structure of our economy. Time series and cross-sectional analyses can be combined, for example, using a line graph to look at the distribution of jobs by industry over time.

The **location quotient** is a tool one small step in the direction of analytic complexity. Location quotients are used to measure the extent to which the contribution of one subgroup of economic actors (e.g., an industry, occupational group) to a regional economy is greater or lesser than the contribution of that subgroup to a larger, reference economy (usually, the U.S.). For instance, let's say that the manufacturing sector provided 18.1 percent of all jobs in your region. The U.S. figure is 15.2 percent. So the location quotient is 1.19 (i.e.,  $18.1/15.2$ ). When used to measure industry concentration, a location quotient is taken as a rough indicator of a region's competitiveness in that industry. The higher the location quotient, the greater the competitive advantage a region appears to have. Plotting location quotients over time for key industries in your economic base is one visual way to gauge changes in relative competitiveness.

You have to be a bit careful as you work with location quotients, as a rise or fall in a location quotient can be spurious. For example, if a region suffers a major job loss with the closure of a large employer that is not replaced, other economic base industries' share of total jobs (and their location quotients) would rise even if their employment is stable, because the total number of jobs (the denominator) has fallen. In this case, an apparent increase in competitiveness is in fact illusory.

**Shift-share analysis** is a means of attributing change in a region's economy (e.g., change in jobs or earnings) to various factors—change in the nation's economy, the particular industry mix in the region, and the competitiveness of the region's economic base industries compared to similar industries elsewhere. Shift-share analysis involves a substantial amount of long division, too much to lay out here. But straightforward explanations of the how-to of shift-share can be found in references cited at the end of this section.

**Economic modeling** is the next step up in complexity, a rather large step, and if you are a novice data user for whom this chapter is intended, you are better off hiring someone if you need modeling done. Modeling encompasses a variety of analytic approaches, such as **input-output analysis** and **economic simulation**, that forecast how an economy would behave under certain circumstances. These circumstances may be a specific event in the regional economy (e.g., opening of a new mill, closure of an old one, building of a convention center), a particular type of policy intervention (e.g., change in the property tax rate), or macroeconomic in nature (e.g., shift in the prime rate). A nice summary of approaches to economic modeling can be found on the Web at <http://www.edrgroup.com/B23.html>.

If you want to educate yourself about tools for regional economic analysis, these resources offer a survey of the basic techniques:

- Bendavid-Val, Avrom, *Regional and Local Economic Analysis for Practitioners*, 4<sup>th</sup> edition (Praeger, 1991)
- Blair, John P., *Local Economic Development: Analysis and Practice* (Sage Publications, 1995)
- Blakely, Edward James, *Planning Local Economic Development: Theory and Practice*, 2<sup>nd</sup> edition (Sage Publications, 1994)

- Dandekar, Hemalata C., *Planner's Use of Information* (Planners Press, 1988)
- Hustedde, R., Shaffer, R., and Pulver, G., *Community Economic Analysis: A How To Manual* (Ames, IA: North Central Regional Center for Rural Development, Iowa State University, December 1993)
- McLean, Mary L., *Understanding Your Economy: Using Analysis to Guide Local Strategic Planning* (Planners Press, 1993)
- Richardson, Harry W., *Regional Economics* (University of Illinois Press, 1979)
- University of Minnesota's Economic Development Web site at [http://www.hhh.umn.edu/Centers/SLP/edweb/ind\\_cook.htm](http://www.hhh.umn.edu/Centers/SLP/edweb/ind_cook.htm)

If you want to be adventurous, the following books provide in-depth information on advanced techniques:

- Burchell, Robert W., et al., *Development Impact Assessment Handbook* (Urban Land Institute, 1994)
- Davis, H. Craig, *Regional Economic Impact Analysis and Project Evaluation* (University of British Columbia, 1990)
- Treyz, George I., *Regional Economic Modeling : A Systematic Approach to Economic Forecasting and Policy Analysis* (Kluwer Academic Publishers, 1993)

We started this section by pointing out that regional economic analysis is indeed an art that stems in part from learning by doing. The prerequisite for being an artist is getting the right tools in your toolkit. The above resources will help you stock that toolkit.

While practice is indispensable to gaining proficiency in economic analysis, the move up the learning curve can be greatly speeded by the aid of a mentor, someone who can give suggestions about choosing the right data, using the analytic tools effectively, and telling a compelling story. If you are working in an organization, odds are good that a mentor is available. The large majority of experienced economic analysts are willing, they tell us, to be a mentor to others regarding the methods and techniques of data analysis.

### **1.5 Perspective – Knowing What Data Can and Cannot Tell You**

However impressive the array of economic statistics appears, it is important to become aware of their limitations. First of all, economic statistics are necessarily *retrospective*. Socioeconomic data describe past, rather than present, economic activity. Some economists liken setting policy using economic data to driving while looking through the rear view mirror.

Moreover, data measure our reality only *imperfectly*. Despite the best efforts of statisticians and data agencies, almost every published data series is an estimate. Some data, like the population figures reported by the Decennial Census, are extremely

accurate; but at times even these are be adjusted for undercounting of some segments of the population. Most other socioeconomic data are based on sample surveys that inherently contain some amount of sampling error. While most data get published as a single point estimate (e.g., the unemployment rate), these estimates are actually the mid-point of a range of values within which analysts believe reality lies. In addition, many estimates contain non-sampling error—imperfections in the method for asking questions or gathering data that skew the results in some fashion.

The *conceptual framework*, that is, the set of definitions, used by any data series will structure what those data can and cannot tell us. Data users need to become aware of any limitations. For example, the unemployment rate by itself cannot provide a complete picture of the employment situation, as it does not cover discouraged workers, those who have stopped looking for work.

As another example, the Standard Industrial Classification (SIC) system, the primary means for classifying jobs and earnings by industry, no longer reflects the nation's economic structure. The SIC code was developed at a time when manufacturing dominated the nation's industrial base. While the SIC code offers detailed classifications that remain appropriate for some industries, such as steel mills and breweries, it cannot provide similar detail and an integrated framework for service-producing industries, the importance of which has expanded significantly in recent decades. Under the SIC code, someone who writes a story for a newspaper is working in a manufacturing industry; someone who writes that story for a radio or television broadcast is a communications worker; and someone who writes the same story for a news syndicate is a business service worker. Because of these types of issues, the SIC code is being replaced by a new North American Industrial Classification System (NAICS) that gives due weight to the service-producing industries. However, historical data classified using the SIC code will not be reclassified using NAICS.

It's important to keep in mind that many statistical data are the *by-products* of information collected for other purposes. The breadth, detail, frequency, or accuracy of a data set may be limited or constrained by the framework within which the data are collected. For example, most of the data we have on income and employment are generated through laws that impose taxes (e.g., unemployment insurance, income) on these activities. As self-employed proprietors do not contribute to the unemployment insurance (UI) system, they are not counted in the ES-202 data generated by UI payments. The fact that data on exports comes from export declarations prepared for customs purposes imposes certain limitations on what those data can tell us.

Some important economic phenomena are *not measured* in a widespread and consistent manner. For example, at present there are no standard nationwide measures of worker skill levels or turnover.

Many economic phenomena are measured, but *not for small areas*. The smaller your area of focus, the more sparse the data. In fact, data below the county level are very difficult to obtain. Of the three primary federal data agencies, only one, the Census Bureau, publishes subcounty socioeconomic data. And pickings are slim within Census. At

present, seekers of subcounty data have to rely almost exclusively on the Decennial Census, which reports for areas as small as census tracts and block groups. But the Decennial Census comes out only once every ten years, so timeliness is an issue.

There is cause for hope, however. The Census Bureau has begun publishing business establishment data by industry and zip code on CD-ROM. Moreover, the Census Bureau is in the midst of implementing the American Community Survey (ACS), an effort to carry out the Decennial Census “long form” survey on an annual basis. The publication of the ACS will be a terrific boon to analysts of small areas. But, they’ll have to wait a while to use those data, which will be ready in the second half of the next decade.





## Chapter 2

### Data Sources: Where the Numbers Come From

In this section, we discuss the overall framework and history of the federal statistical system, the roles played by each of the three major federal statistical agencies, and other entities that produce socioeconomic data useful to regional analysts.

#### ***2.1 It Ain't Always Pretty, But It Works***

To understand how to find data, it helps to know how the current arrangements for creating and disseminating data evolved. The federal statistical system is highly *decentralized*, in contrast to arrangements found in most other developed countries. Over 70 different federal agencies collect, analyze, and disseminate data. This decentralized approach can be traced back to 1866-67, when the precursors to the present statistics units in the departments of Treasury, Agriculture, and Education were created by Congress. These were followed by the predecessor of the Bureau of Labor Statistics in 1884 and the Bureau of the Census in 1902.<sup>3</sup>

Government-sponsored efforts to examine the pros and cons of centralizing the statistical system have been carried out with regularity since 1903. In fact, studies have taken place in every decade in the 20<sup>th</sup> century, with the exception of the 1910s. While a coordinating mechanism was developed in the 1930s (and now exists as the Statistical Policy Branch of the Office of Management and Budget), centralization itself has never come to pass. Fears regarding the dangers of centralization, the investment of individual data agencies in the status quo, and inertia all have facilitated the continuation of the decentralized approach.

In our decentralized data system, collections of valuable regional socioeconomic data can be found across a large number of federal data agencies. Decentralization does have certain advantages – individual agencies can be more responsive to their particular base of data users and have some liberty to be creative and entrepreneurial and not need to adhere to some government-wide approach.

However, our particular decentralized system, with an ever-changing ad hoc structure and the lack of a central index of information, is not easy to work with. In fact, it's hard for most data users, even those that have been in the field for years, to fully understand what data series exist, where to find them, how they're collected, and how to make sense of data from three agencies that seem to measure the same thing (e.g., employment) and yield different sets of numbers.

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<sup>3</sup> Historical information on the federal data system and individual agencies is taken from Janet L. Norwood, *Organizing to Count: Change in the Federal Statistical System* (Washington, DC: Urban Institute Press, 1995).

When we think of the federal data system, a number of images come to mind:

- ***Ad hoc design:*** The system is like an old mansion built just after the Civil War that your extended family has inherited from your great, great-grandparents. Every generation, each branch of the family has added its own wing and interior designs here, and replaced the furniture and the plumbing there. By the present, the house looks like this crazy Rube Goldberg contraption and only the people who have lived in it for a while know how it works, where the rooms are, and what they're for. But because enough people know the system, things function alright and it would be too much trouble and too expensive to tear the house down and build a well-integrated dwelling with a single architectural theme.
- ***Not easily knowable:*** The federal statistical system is like a large, dense tropical rainforest. No one has been through every part of the forest, every part of the forest is constantly changing anyway, there are no forest-wide maps that explain the flora and fauna in any detail, and there are no forest rangers. What you can find, and you have to find them on your own, are these grizzled guides who, through years of experience, know their part of the forest really well and can take you as far as the next valley, at which point they can tell you where the next guide lives, at least he used to live there, and they wish you good luck and Godspeed.
- ***Tell me again, which are the apples and which are the oranges?:*** For a regional data analyst, the variables of the greatest interest are likely to be income, population, employment, and unemployment. These variables are important to the federal government too, so much so that for a number of them, more than one statistical agency, and sometimes more than one unit of the same agency, produce their own data series. Not surprisingly, the data in each of these series differ, sometimes significantly, from one another; the results can be confusing to an analyst. Differing numbers come about in part because each series uses a distinct methodology, and usually there is a good reason to do so. For example, one series may use sampling as a means of getting an estimate out only a few weeks later, whereas another requires a year or two to gather and organize detailed data from the full universe. Moreover, differences between data series often occur because the definition of what is being measured varies from one data series and agency to the next. For example, the terms "employment" and "income" at the Bureau of Economic Analysis mean something different from what they mean at the Bureau of the Census and the Bureau of Labor Statistics. The burden is on the analyst to be aware of the definitions used by various data series, and know how to use these series in combination to come up with her or his own interpretation of reality.

If our federal data system has its frustrations, it does work. Much of the data you need to tell the story of your economy are available, affordable, and released in a timely manner. But to know where to go and how to interpret the data, you need to learn the ins and outs of the data system, in all its idiosyncrasies.

In our experience, the federal system for subnational data functions as well as it does because the large majority of the statistical agency staff are hard-working, dedicated people who care passionately about their particular corner of the data world. They try to do a good job in challenging circumstances, and most of the time they succeed.

In the next sections, we give an overview of the players in the federal statistical system, as well as important providers of nonfederal data. We begin by looking at the three federal statistical agencies with primary responsibilities for providing regional socioeconomic data – the Bureau of the Census, the Bureau of Labor Statistics (BLS), and the Bureau of Economic Analysis (BEA).

## **2.2 The Big Three**

To a large extent, the data most frequently used by regional analysts are produced by Census, BLS and BEA. Each agency has a different focus, scope, and approach to its efforts.

- The primary function of the Census Bureau is to wade into the real world, surveys in hand, and count people (e.g., by age, race, and educational attainment), look at quality of life (e.g., housing, health, and crime), and measure economic activity (e.g., income, firms, jobs, and capital investment). More than any other statistical agency, the Census Bureau examines and describes the detailed patterns of American lives and businesses at every level of geography. For the most part, the Census Bureau does primary research, that is, its staff collect their own data rather than using data gathered by other (secondary) sources.
- The focus of BLS is right in its title, labor statistics. BLS measures people at work – how many, in what industries, and with what earnings and purchasing power. BLS also relies on primary data, but it utilizes the Census Bureau and state employment security agencies to do the collection and much of the analysis, following BLS guidelines.
- Unlike Census and BLS, BEA produces one big, complex, integrated data set. Think of BEA as our national economic accountant, reconciling the nation's disparate financial and economic data into a single set of balanced accounts that provides a comprehensive view of the nation's economic activity. Among the Big Three, BEA offers the widest view of economic activity, measuring variables (e.g., proprietorships, military employment) the other agencies do not. BEA relies almost entirely on secondary data

provided by agencies throughout the federal government, including Census and BLS.

## Census Bureau

The Census Bureau, part of the Department of Commerce, is the largest federal statistical agency. For fiscal year (FY) 1998, Census had an overall budget of approximately \$895 million, over a fifth of which came from reimbursement from other federal agencies or the private sector. In that year, about half of the Bureau's direct funding went towards preparation for the 2000 Census. For FY1999, the budget will jump to about \$1.4 billion, of which \$860 million will be for the 2000 Census.

It may surprise you to know that there was no permanent Census Bureau until 1902. The Decennial Census is the only data collection effort called for by the U.S. Constitution. Data for the early Decennial Censuses were gathered by U.S. marshals; in the 19<sup>th</sup> century, that job was transferred to the statistical agencies of state governments. In 1902, Congress created a permanent Census Bureau to staff and carry out the Decennial Census, and also to collect and publish other data regarding the U.S. population and economy.

Three types of Census Bureau data series are of particular interest to regional economic analysts – population, business activity, and housing. **Population** data series cover population size, personal characteristics (e.g., race, sex, age, educational attainment, occupation), and household characteristics (e.g., composition, income). Population data series include:

- Decennial Census of Population and Housing – the census of the entire U.S. population, carried out every ten years
- Population Estimates Program – an annual series of population estimates and projections, carried out in cooperation with states
- Small Area Income and Poverty Estimates Program – a periodic effort to model household income and poverty rates for counties
- Annual Demographic Survey of the Current Population Survey (CPS) – a survey of a sample of households that produces income and population characteristics data
- American Community Survey (ACS) – a soon-to-be nationwide monthly survey, with annually published results, using the Decennial Census long form

**Business activity** data series describe, by industry, the aggregate size of the industry (in terms of jobs or value of shipments, for example), the number of companies and establishments, and measures of various aspects of business operation (such as cost of raw materials, investments in building and equipment, and imports and exports). Key business activity data series include:

- Economic Census – a census of most U.S. businesses, carried out every five years
- County Business Patterns – an annual series of employment and wages by industry
- Annual Survey of Manufactures – a yearly profile of manufacturing industry activity
- Export statistics – export activity by location

**Housing** data series describe housing types, conditions, ownership, costs, occupancy, and other characteristics. Important housing data series from the Census Bureau include:

- Decennial Census of Population and Housing
- American Housing Survey – periodic survey of housing characteristics in specific metropolitan areas (conducted on behalf of the Department of Housing and Urban Development)
- Construction statistics – residential construction permits and valuation, and sales of one-family houses
- Housing vacancy and homeownership – annual survey producing rates of housing vacancy and homeownership

As an aid to data users, the Census Bureau regularly prepares data compendia that organize a wide variety of data series from Census and other sources. The most well-used compendium is the *Statistical Abstract of the United States*. Other Census compendia are organized at the geographic level and include *County and City Data Book*, *State and Metropolitan Area Data Book*, and *USA Counties*.

Census also provides a digital mapping database, called Topologically Integrated Geographic Encoding and Referencing (TIGER). The TIGER database contains geographic features such as roads, railroads, rivers, lakes, political boundaries, and census statistical boundaries, covering the entire United States.

Most of the Census data are available on-line, though the form of availability (text, spreadsheet, .html, or .pdf) will vary by data series. The Census Web site, like the federal data system as a whole, is organized on a somewhat ad hoc basis. Finding what you want can take a bit of time. A good place to begin is the A-Z index of Census Web sites, at <http://www.census.gov/main/www/subjects.html>. Many Census data series also can be purchased in CD-ROM format. The full list of Census data products can be viewed on-line at <http://www.census.gov/mp/www/censtore.html>.

Through a variety of mechanisms, Census offers outside data users access to its “microdata,” that is, data on individual persons, households, and establishments, with proper protection for confidentiality. The Census Bureau sells CD-ROMs and computer tapes of Public Use Microdata Samples (PUMS) from the Decennial Census, the American Housing Survey, CPS, and the Survey of Income and Program Participation (SIPP). It also provides on-line access to these data. The Census Bureau has two units, the Center for Economic Studies and Statistics of U.S. Business, that provide analysis, on a reimbursable basis, of corporate and establishment microdata from the Economic

Census and the source file for County Business Patterns, respectively. These various microdata sources are discussed in more detail in Chapter 9.

## Bureau of Labor Statistics

BLS, part of the Department of Labor, is the second largest provider of socioeconomic data in the U.S., after the Census Bureau. In FY1998, the agency's budget was approximately \$403 million. A good portion of BLS funding is given to the Census Bureau to manage the Current Population Survey (which provides monthly labor force status data) and to state employment security agencies to collect and analyze employment data.

The organization that became the Bureau of Labor Statistics was created by Congress in 1884. Amazingly concise by today's standards, the 1888 language laying out the purpose of the agency remains in the U.S. Code, and is interesting to read in its entirety:

The general design and duties of the Bureau of Labor Statistics shall be to acquire and diffuse among the people of the United States useful information on subjects connected with labor, in the most general and comprehensive sense of that word, and especially upon its relation to capital, the hours of labor, the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral prosperity.

BLS provides three types of data series of interest to regional analysts – labor force status of persons (by place of residence), jobs and wages (by place of work), and prices and living conditions. **Labor force** data are prepared monthly through the Local Area Unemployment Statistics (LAUS) program and describe labor force participation, employment, unemployment, and unemployment rate.

**Job and wage** (place of work) data are available through a variety of BLS-sponsored programs, including:

- Covered Employment and Wages (ES-202) – a quarterly collection of job and wage data from all employers participating in state unemployment insurance (UI) programs
- Current Employment Statistics (CES) – through a monthly survey, an estimation of job levels and hourly wages, by industry
- Occupational Employment Statistics (OES) – through an annual survey, an estimation of number of positions and average hourly wage by occupation, by industry
- National Compensation Survey (NCS) – annual survey of regions to determine wage and benefit data by occupation, with regions surveyed on a rotating basis
- Mass Layoff Statistics – monthly and quarterly data on mass layoff events, separated workers, and persons filing UI claims, for states and areas

The two key BLS data series on *prices and living conditions* are:

- Consumer Price Index (CPI) – an index of changes in the cost of various categories of consumer items
- Consumer Expenditure Survey – average annual consumer expenditure data, by detailed type of goods and services

While the BLS Web site is somewhat easier to grasp and navigate than that for the Census, the BLS site does not provide on-line access to several key data series (including ES-202). As with the Census site, the form in which the BLS data are available depends on the program. For several programs (LAUS, CES, and CPI), data can be retrieved by specifying, in a series of steps, the type of data and specific region you want, and then retrieving the results as a .html file or spreadsheet file. Other series are offered in text format, and a small number are in Adobe Acrobat (.pdf) format. If you are not quite sure where to look on the BLS Web site, a good place to start is <http://www.bls.gov/proghome.htm>.

Unlike Census and BEA, BLS does not provide its data in a CD-ROM format. If you want a published data series that is not available on-line, you can order the print version by calling the Chicago regional office of BLS at (312) 353-1880.

### Bureau of Economic Analysis

BEA is part of the Department of Commerce. In part because it has few primary data collection responsibilities, BEA is the smallest of the Big Three, with a FY1998 budget of approximately \$51 million. While nearly all data collected by Census and BLS are available for use in subnational analysis, the same is not true at BEA. BEA is broken into four major units – national, industry, international, and regional accounts. Though work in one unit may inform that in another, the portion of the budget devoted to the collection and preparation of data that can be used for subnational analysis is significantly smaller than the whole.

BEA's role as the nation's economic accountant came about in the 1940s. The agency's approach was based on the national income and accounts framework developed by Simon Kuznets, who won the Nobel Prize for his work in 1971.

BEA has several major data products of value to regional economic analysts. The Regional Economic Information System (REIS) is the most comprehensive of the federal income and employment data series. REIS provides income data broken out by sources other than jobs earnings (including investment income and transfer payments) and job data beyond wage and salary jobs (including proprietorships and military employment). In producing REIS, BEA makes extensive use of data that are by-products of the administration of various federal and state programs, including unemployment insurance, Social Security, federal income taxes, veterans benefits, and military payroll.

BEA produces several other data products that reflect its role as the nation's economic accountant. These are useful to more sophisticated regional data users, and include:

- Regional Input-Output Modeling System (RIMS II) – output, earnings and employment multipliers by industry (471 detailed industries, 38 industry aggregations)
- Gross State Product (GSP) – estimates of gross state product and its components for two-digit SIC categories
- Foreign Direct Investment (FDI) – number, employment, payroll, and shipments or sales of foreign-owned U.S. establishments, by industry

Until recently, BEA prepared projections of employment, income, and GSP by state. However, this series recently has been discontinued, due to budget cuts.

The most efficient way to get the entire REIS database is to purchase the CD-ROM from BEA. In a boon to data users, the University of Virginia has a very user-friendly Web site that provides REIS data for individual geographic areas down to the county level (.html and spreadsheet format), at <http://fisher.lib.Virginia.EDU/reis/>.

To grasp what BEA offers on-line, and what it does not, you need to visit two Web pages, the first at [http://www.bea.doc.gov/bea/uguide.htm#\\_1\\_25](http://www.bea.doc.gov/bea/uguide.htm#_1_25) and the second at <http://www.bea.doc.gov/bea/drl.htm>. State REIS files can be downloaded in .zip format from the site. GSP data are available in text format on-line. FDI data are available in print only. RIMS II data must be purchased from BEA staff, who prepare a multiplier set for a specific geographic area on a purchase-order basis.

## **2.3 Significant Others**

While the Big Three are the most important purveyors of regional socioeconomic data, by no means are they the only ones. A number of other federal agencies provide specialized regional data (e.g., concerning transportation and health). In addition, many state and local government agencies collect and make available data not collected through federal programs. Finally, numerous private-sector sources publish proprietary data series.

### **Other Federal Agencies**

In FY1998, the combined budget for statistical activities across the federal government was \$3.1 billion. Over 70 federal agencies have responsibility for collecting, analyzing, and publishing statistics. The efforts of many of these agencies can be relevant to regional data analysts with particular needs. One way to view who does what on the federal data scene is to visit the Web site maintained by the Federal Interagency Council



on Statistical Policy, at <http://www.fedstats.gov/>.<sup>4</sup> A sample of agencies with useful regional data series includes:

- Department of Agriculture, National Agricultural Statistics Service – data on farm activities and prices
- Department of Education, National Center for Education Statistics – data on educational programs, achievement, attainment, and spending
- Department of Energy, Energy Information Administration – state energy consumption profiles, and data on energy production and reserves
- Federal Financial Institutions Examination Council (FFIEC) – Community Reinvestment Act (CRA) regional reports on small business and small farm loans, and a National Information Center with information on individual banks
- Department of Housing and Urban Development – a database on American cities and suburbs, and an on-line library
- National Science Foundation, Division of Science Resources Studies – data on R&D expenditures and workforce, science and engineering education, and patent activity
- Small Business Administration – profile of each state's small business economy
- Department of Transportation, Bureau of Transportation Statistics – the National Transportation Data Archive, a central resource for transportation statistics
- Department of Treasury, Statistics of Income Division – annual individual income tax data for states and counties, and state-to-state and county-to-county migration data on a year-to-year basis

Each federal agency's approach to data access is determined independently. Many agencies have very sophisticated, user-friendly Web sites.

While the FedStats site is helpful, its list of links for subnational statistics is relatively short. Unfortunately, the federal government does not have a comprehensive, detailed index of what regional data are provided by what agencies, and how to access them. So we created our own index. Web links to various agencies that produce regional data can be found at the Web site associated with this guidebook.

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<sup>4</sup> A more detailed, though less comprehensive, guide to federal data series is buried in Appendix B (pp. 290-301) of the *Census Catalog & Guide: 1997*, published by the Census Bureau (Washington, DC: Government Printing Office, July 1997). This section, entitled "Federal Statistical Reports by Agency," gives detailed summaries of various data series and reports from eight agencies other than Census (which is covered in great detail in the body of the catalog itself). However, the section does not focus on regional data per se, and is limited in the number of data sources covered. Still, it provides a useful overview of the work of those agencies included. You can download the document at in Adobe Acrobat (.pdf) format at <http://www.census.gov/prod/www/abs/catalogs.html>.

## State and Local Government Agencies

State and local governments often undertake regular or one-time analytic efforts to fill in gaps in federal data series, meet statutory requirements, or address other needs. Such efforts may involve primary data collection (e.g., a population census), utilize existing data (e.g., sales tax records), or use existing federal and state data to model demographic or economic activity. The nature of these activities can best be determined by asking. A good place to start your inquiry is your lead State Data Center, listed in Appendix A.

## Private Sources of Data

There is a multitude of private for-profit and nonprofit providers of regional socioeconomic data, many of which are listed at our Web site. The categories of private sector data series include demographic and consumer profiles, industry profiles, economic modeling, cost-of-living data, international trade data, and sector-specific data (e.g., real estate and construction, finance, tourism). Some of these data series are attempts to add value to federal and other secondary data through manipulation (e.g., reorganization, modeling). Others are the result of the independent collection and publication of primary data.

For regional economic analysis, these various nongovernmental data series can be useful adjuncts to, but not substitutes for, federal data. In our view and the view of respondents to our data users survey, the comprehensiveness, depth, trustworthiness, and regularity of federal data cannot be surpassed by the private sector. Moreover, while some nongovernmental data are available for free, most are relatively costly. After all, these organizations' data efforts are not supported by taxpayer dollars.

## **2.4 OK, It's Time to Put Your Boots On**

At the beginning of this chapter, we compared the federal system for regional socioeconomic data to a dense, confusing forest. Continuing with the analogy, the aim of this book is to provide you with a guide to the trails, vistas, and precipices of that forest. Chapter One gives you suggestions for the provisions you want to pack on your trip. This chapter provides you with an overview of the terrain, like one of those pullout maps in the back of a guidebook. In Chapter Three, we take you on a hike through the forest itself. And Chapter Four gives you a list of suggestions for other guides you might want to use when you have a specific destination in mind. Let's hit the trail.

## Chapter 3

# Statistics for Analyzing Your Economy

### 3.1 Introduction – The Dimensions of Economic Activity and Well-Being

Having discussed how to use data and who produces data, it's time to move to the heart of the matter – the data themselves. Analysts wanting to gain an understanding of the workings of a local economy usually do so by developing a statistical grasp of various dimensions of economic activity and well-being. This chapter is structured around eight categories of socioeconomic data. In each category, we discuss key variables and definitions, and profile a number of valuable data series in terms of characteristics such as measures provided, level of geographic detail, frequency of release, and means of access.

We begin by reviewing the three most basic of socioeconomic data categories, the ones that almost all analysts work with:

- **Demographics** – population change (growth, decline), the components of population change (migration, births, deaths), and population characteristics (of which there are many, such as age, race, gender, and educational attainment)
- **Employment and unemployment** – numbers of jobs, by industry and occupation, and numbers of people who are employed, unemployed and looking for work, and unemployed and happy to be that way
- **Income and earnings** – annual income (from a variety of sources, including work, income, and transfer payments), and hourly wages by occupation

We then move beyond the basics to other categories of economic activity, including:

- **Cost of living** – change in the cost of living in one location over time, and comparisons of the cost of living in various locations at the same point in time
- **Business operations** – inputs (e.g., cost and types of materials and energy, capital expenditures) and outputs (e.g., value added, value of goods and services produced) of the key industries in an economy
- **Foreign trade exports** – level of exports in state and metro economies
- **Economic resource base** – the key building blocks for economic health, including research and development, education, and finance
- **Quality of life** – how well people live, in terms of housing, health status, and public safety

## **The Basics**

### **3.2 Demographics**

Understanding demographic trends in your region is valuable for several reasons. First, it's important to know your constituency in terms of basic characteristics such as age, sex, and race. Second, you can track the impacts of regional economic trends, such as the relation between job growth and net migration. Third, as a region's residents likely provide a large portion, if not the majority, of its labor force participants, it's helpful to know work-relevant attributes such as years of education.

We can divide demographic data for economic analysis into two categories. The first concerns ***population size and the components of change*** (migration, births, and deaths). The second category covers ***population characteristics*** such as age, race, gender, marital status, and educational attainment.

#### **Population Size and Components of Change**

The two primary sources of data on population size and components of change are the Population Estimates Program of the Bureau of the Census, and the agency (or university center) in your state responsible for demographic analysis. The Census Bureau does a good job of updating and making accessible annual population estimates for states and areas. Some state demographic analysts differ from the Census Bureau in methodological approach. It is worth talking to the analysts in your state to understand the whys and wherefores of their approach as compared to that of the Census Bureau.

Migration data provided by the Statistics of Income (SOI) Division of the Internal Revenue Service (IRS) can be a valuable adjunct to the Census Bureau estimates. While the Census Bureau estimates net domestic migration (in-migrants from other areas in the U.S. less out-migrants to other areas in the U.S.), the SOI Division can provide tables that show gross domestic migration (in-migration flow, out-migration flow) from county to county and state to state across the U.S. These tables are possible because the IRS has our tax returns, and can track changes of address from year to year.

For each data source listed below, we furnish a profile that includes measures provided, level of geographic detail, frequency of release, method of data collection, means of access to the data, and contacts for assistance.

#### **1. Population Estimates Program, Bureau of the Census**

- Measures: Current population (as of July 1) and components of change, including births, deaths, net domestic migration, and net international migration
- Geography: States, counties, metropolitan areas, places (population estimates only), and county subdivisions (population estimates only)
- Frequency: Annual

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- Method: Utilizes existing data series (such as vital statistics, federal tax returns, Medicare enrollment, and immigration) to update Decennial Census counts. Estimates developed through the Federal-State Cooperative Program for Population Estimates.
- Access: Population Estimates and Projections series (P25), available at <http://www.census.gov/population/www/estimates/popest.html>
- Assistance: Population Division, (301) 457-2422 or [pop@census.gov](mailto:pop@census.gov)

#### 2. State governments

Many state governments sponsor development of independent estimates of state and substate population and components of change. Often, such efforts are carried out at a state university or the state planning agency. To find state-generated demographic data, you can begin by checking with your lead State Data Center. (See list in Appendix A. Links and contact information also available at <http://www.census.gov/sdc/www/sdctxt.html>.)

#### 3. Statistics of Income Program, Internal Revenue Service, Department of the Treasury

- Measures: Year-to-year gross domestic migration flows (inflows, outflows)
- Geography: County-to-county and state-to-state for entire U.S.
- Frequency: Annual
- Method: Uses Form 1040 returns to identify year-to-year address changes for taxpayers and their families
- Access: Spreadsheet available for purchase, may be downloaded. For information, go to [http://www.irs.ustreas.gov/prod/tax\\_stats/soi/soi\\_pub.html](http://www.irs.ustreas.gov/prod/tax_stats/soi/soi_pub.html).
- Assistance: Statistics of Income Division, (202) 874-0410

### Characteristics of Population

The two primary federal sources of current data on population characteristics are the Population Estimates Program and Current Population Reports, both efforts of the Population Division of the Census Bureau. The Population Estimates Program provides annual estimates of population by age, sex, race, and Hispanic origin for all states and counties, and is easily accessible via the Web. Current Population Reports (report series P20) provides data on educational attainment for states and larger metro areas.

The Population Estimates Program works only with secondary data sources that are available for all localities across the country. Using the Decennial Census as the starting point, the Program makes annual adjustments on the basis of a variety of existing public records, such as vital records and tax returns, that collectively cover the entire U.S. population.

Current Population Reports data are drawn entirely from one source of primary data, the Current Population Survey (CPS). The CPS asks selected respondents a variety of questions not addressed in public records, such as marital and family status, educational attainment, and geographic mobility. The CPS sample, covering 50,000 households, is quite small compared to the U.S. population as a whole. Therefore, Current Population Reports publishes population characteristics data primarily for the nation and multi-state regions, with educational attainment being an exception.

A third, but usually out-of-date, source of data on population characteristics is the Decennial Census. The Decennial Census can provide more detail, both in terms of population characteristics and geography, than the two sources previously mentioned. Through the “long form” survey, it asks detailed questions, of the type asked by the CPS, of 17 percent of U.S. households (about 16 million households in 1990), which allows it to provide extensive small area coverage. However, as we know, Decennial Census data rapidly become out of date. These data are most useful in the second quarter of any decade, most recently from the release of the 1990 data (primarily in 1992) through 1994.

To address the issues mentioned above – lack of adequate detail in the annual series and the lack of timeliness of the Decennial Census – the Census Bureau is in the process of implementing the American Community Survey (ACS). The ACS is a monthly survey, with annual data publication, using the long form of the Decennial Census questionnaire. At full implementation, the ACS will achieve the same sample size as the Decennial Census – 17 percent of households. In 1996, the Census Bureau began to develop the ACS at four sites around the U.S., and has since added six more sites. By 2002, population characteristic estimates generated by the ACS will be available for all states and large metro areas; by 2008, estimates will be available for the smallest areas of the country. The Census Bureau is continually adding sites for the ACS. For those of you lucky enough to be in those areas, results are available on the ACS Web site.

You also might check if your state demographic agency independently produces population characteristic data. If it does, it is worth your while to understand its methodological approach compared to that of the Census Bureau.

#### 1. Population Estimates Program, Bureau of the Census

- Measures: Population (as of July 1) by age, sex, race, Hispanic origin
- Geography: States, counties, places and minor civil divisions
- Frequency: Annual
- Method: Utilizes existing data series such as births, deaths, federal tax returns, Medicare enrollment, and immigration, to update Decennial Census counts. Estimates developed through the Federal-State Cooperative Program for Population Estimates.
- Access: Population Estimates and Projections series (P25), available at [www.census.gov/population/www/estimates/popest.html](http://www.census.gov/population/www/estimates/popest.html)
- Assistance: Population Division, (301) 457-2422 or [pop@census.gov](mailto:pop@census.gov)

2. Educational Attainment in the U.S., Current Population Reports (report series P20, Population Characteristics), Bureau of the Census

- Measures: Population by educational attainment (percent with high school diploma, percent with bachelor's degree). For 25 largest states and 15 largest metro areas, educational attainment provided by age, sex, race and Hispanic origin.
- Geography: States and metro areas
- Frequency: Published reports provided annually, based on March data. However, metro tables in recent reports remain blank, awaiting recalculation based on new metro area definitions.
- Method: Data collected in Annual Demographic Survey (CPS March supplement), through interviews with 50,000 households. The CPS is a joint effort of BLS and Census, and is carried out by Census.
- Access: Recent annual reports can be downloaded at <http://www.census.gov/prod/www/abs/ed-attn.html>. Historical data (1940-93) can be obtained in print by ordering report P20-476 at (301) 457-4100.
- Assistance: Current Population Survey, (301) 457-2422 or [cpshelp@info.census.gov](mailto:cpshelp@info.census.gov)

3. Decennial Census, Bureau of the Census

- Measures: Population by age, sex, ethnicity, race, marital and family status, veterans status, years of school completed, geographic mobility, journey to work, and other variables (as of April)
- Geography: States, metro areas, counties, urbanized areas, cities, places, minor civil divisions, census tracts, zip codes, block groups, and other bounded areas
- Frequency: Data collected in years ending in "0"
- Method: Certain data through census of entire U.S. population ("short form"). Other data collected through survey ("long form") of one-sixth of households.
- Access: For the 1990 Census, <http://venus.census.gov/cdrom/lookup>
- Assistance: Population Division, (301) 457-2422 or [pop@census.gov](mailto:pop@census.gov)

4. American Community Survey, Bureau of the Census

- Measures: Same variables as found above for Decennial Census
- Geography: Eventually, the ACS will cover the same geographic areas as found above for the Decennial Census. The ACS is being implemented in four phases: demonstration period, 1996-1998 (ten sites); comparison sites, 1999-2001 (31 sites); national comparison sample, 2000-2002 (all states and geographic areas or population groups of 250,000 persons or more); and full implementation nationwide, 2003 and beyond. Full implementation for data collection in every

county is planned to start in 2003. By 2004, data will be available for all areas and population groups of 65,000 or more. For smaller areas, it will take two to five years to sample the same number of households as sampled in the Decennial Census. For small areas and population groups of 15,000 or less, it will take five years to accumulate a large enough sample to provide estimates with accuracy similar to the Decennial Census. Therefore, updated information for areas such as neighborhoods will be available starting in 2008 and every year thereafter.

- Frequency: Annual estimates to be provided for all states, cities, counties, metropolitan areas, and population groups of 65,000 persons or more. For smaller geographic areas, rolling multiyear estimate of characteristics to be provided annually.
- Method: Monthly mail survey with telephone follow-up. (No address will receive survey more than once in five years.) Detail on methodology available at [http://www.census.gov/CMS/www/index\\_b.htm](http://www.census.gov/CMS/www/index_b.htm).
- Access: Regional data are available on-line as they are prepared. For currently available data, see [http://www.census.gov/CMS/www/index\\_c.htm](http://www.census.gov/CMS/www/index_c.htm). ACS microdata will be available through CD-ROM and other media. See [http://www.census.gov/CMS/www/index\\_a.htm](http://www.census.gov/CMS/www/index_a.htm) for ACS updates.
- Assistance: (888) 456-7215 or [ACS@Census.Gov](mailto:ACS@Census.Gov)

### **3.3 Employment and Unemployment**

Employment data provide the foundation for any regional economic analysis. In large part, a region's economic activity and well-being are a function of the number and types of jobs available. Moreover, knowledge of trends in the distribution of jobs by industry, and the nature of that distribution relative to other areas, is critical to understanding a region's competitive advantages, or lack thereof, and prospects for future economic activity.

Employment data sources can be divided into two categories, differentiated by perspective. In the first category, data are by *place of residence*, that is, where members of the labor force live. In the second, data are by *place of work*, that is, where the jobs are physically located. Employment by place of residence can be differentiated from employment by place of work in that the former measures "employed persons" and the latter measures "jobs." One job can be full-time or part-time, and one employed person can hold down more than one job.

For any of several reasons, the number of employed persons in a region usually will not match the number of jobs. One person can have two or more jobs. Workers can live in one area and commute to work in another. Most place-of-work data series count only wage and salary jobs, not self-employed people. One of the skills of experienced data analysts is to be able to take employment data from various sources, and figure out a way to work with them to develop one consistent story about the region's economy.



## Labor Force Status by Place of Residence

For labor force data by place of residence, the “universe” is the ***civilian noninstitutional population***, persons 16 years and older who are not in jail or chronic-care hospitals. This population is divided into those who are in the ***labor force*** and those who are not. The ratio between the labor force and the civilian noninstitutional population is the ***labor force participation rate***. The labor force is composed of those with a job, the ***employed***, and those without a job and actively looking for one, the ***unemployed***. Persons without a job and not looking for one are not considered to be in the labor force.

Labor force data are important indicators of regional economic performance. They tell us how quickly the labor force is growing, the extent to which people are able to find jobs, the extent to which people are dropping out of the labor force, and the characteristics of the people unable or not wanting to find work.

At present, we have one primary source of current employment data by place of residence, the Local Area Unemployment Statistics (LAUS) Program in the Bureau of Labor Statistics (BLS). The LAUS Program generates two related data series. The first is monthly estimates of labor force, employment and unemployment for states, labor market areas (LMAs), counties, and cities. This series, known to most users as “LAUS data,” is prepared by state labor market information (LMI) agencies using BLS guidelines. Estimates are derived from some combination of four sources, depending on the geographic area – the CPS, unemployment insurance (UI) claim data, the Current Employment Statistics (CES) survey of establishments, and ES-202 data. (For these last two sources, see descriptions in section on jobs by place of work.) As estimates are based largely on samples and extrapolation, the estimates tend to be more reliable for the more populous areas.

The second data series, known as the Geographic Profile (GP), contains annual estimates of state and large metropolitan area labor force characteristics, many of which are not found in monthly LAUS data. These estimates are based only on the CPS, so they are not strictly compatible with the LAUS data. Estimates provided by the GP, but not LAUS, include civilian noninstitutional population (allowing the estimation of the labor force participation rate) and the distribution of the labor force by occupation, industry of employment, population characteristic (age, sex, race, and Hispanic origin), and full- and part-time work. GP data are contained in an annual print publication, *Geographic Profile of Employment and Unemployment*. While only those estimates that meet BLS standards for reliability are published in this document, the full set of data series used in the document’s development are available on-line.

The Census Bureau, through the Decennial Census, provides detailed information about characteristics of the employed, unemployed, and those not in the labor force. Again, however, these data quickly become out of date. However, the emergence of the ACS should allow local analysts to gain valuable insights regarding characteristics by labor force status not available from current sources.

1. Monthly labor force estimates, Local Area Unemployment Statistics Program, Bureau of Labor Statistics, prepared by state LMI agencies

- Measures: Labor force, employment, unemployment, and unemployment rate
- Geography: All states, metropolitan statistical/primary metropolitan statistical areas, counties and county equivalents, cities of 25,000 population or more, and all cities and towns in New England
- Frequency: Monthly estimates, with calendar year annual averages
- Method: Estimates based on some combination of data from the CPS, UI claim data, the CES survey, and ES-202 data. Method varies by type of geographic area. Estimates developed through a federal-state cooperative program.
- Access: From state LMI agencies (see Appendix B) and from BLS on-line at <http://www.bls.gov/lauhome.htm>
- Assistance: State LMI agencies, or BLS LAUS Program at (202) 606-6392 or [lausinfo@bls.gov](mailto:lausinfo@bls.gov)

2. Geographic Profile, LAUS Program, Bureau of Labor Statistics

- Measures: Civilian noninstitutional population; labor force participation rate; employment status of the civilian noninstitutional population by sex, age, race, Hispanic origin, occupation, industry, and hours worked
- Geography: States, 50 large metropolitan areas, and 17 central cities
- Frequency: Annual
- Method: Derived from monthly CPS data
- Access: Print publication (*Geographic Profile of Employment and Unemployment*) available from BLS at 312-353-1880 x0. FTP files available at <ftp://ftp.bls.gov/pub/time.series/gp/>.
- Assistance: LAUS Program, (202) 606-6392 or [lausinfo@bls.gov](mailto:lausinfo@bls.gov)

3. Decennial Census and American Community Survey, Bureau of the Census

- Measures: Characteristics of the population by labor force status, including sex, race, presence and age of children, hours worked, weeks worked, and class of worker
- Geography: States, metro areas, counties, urbanized areas, cities, places, minor civil divisions, census tracts, zip codes, block groups, other bounded areas
- Frequency: Census data published for years ending in "0." ACS data will be published annually, as described in section 3.2.
- Method: Data derived from sample survey of U.S. population
- Access: Data from the 1990 Census can be accessed at <http://venus.census.gov/cdrom/lookup>. As they become available, data from ACS can be accessed at [http://www.census.gov/CMS/www/index\\_c.htm](http://www.census.gov/CMS/www/index_c.htm).
- Assistance: For Decennial Census, the Population Division at (301) 457-2422 or [pop@census.gov](mailto:pop@census.gov). For ACS, (888) 456-7215 or [ACS@Census.Gov](mailto:ACS@Census.Gov).

## Employment by Place of Work

Employment data by place of work are very valuable as descriptors of economic performance and structure. Change in the overall number of jobs is a key measure of economic performance. Further, analyzed through tools such as time series and cross-sectional analysis and location quotients, job data are critical for understanding industry-specific job trends in a region's economic base, or traded sector. The traded sector is composed of those portions of the regional economy (e.g., manufacturing, tourism) that compete in markets that extend beyond the region itself and so generate the income that supports the non-traded portion of the economy (e.g., movie theatres, beauty salons). Review of trends in a region's economic structure allows analysts to understand the reasons for recent economic performance and decision makers to take actions that promote a strong traded sector.

The federal government provides four valuable sources of employment data by place of work:

- Regional Economic Information System (REIS) employment data, from the Bureau of Economic Analysis (BEA)
- Current Employment Statistics (CES) data (also known as BLS-790), provided through BLS and state LMI agencies
- Covered Employment and Wages (ES-202) data, also provided through the BLS and state LMI agencies
- County Business Patterns, from the Census Bureau

While each of these data sources measures the same phenomenon, generally speaking, they differ significantly from one another in many ways: type of jobs covered, industry sectors covered, level of geographic detail provided, level of industry detail provided, method of data collection, and frequency of release. Along each of these various dimensions, one source has a competitive advantage over the others. However, no source is the “best” for all occasions. Which ones you use depends on the nature of your needs. Often, analysts will use several in combination. One of the tricks of the analytic trade is to use data from these various sources to paint a consistent picture of regional job trends.

We can look at the relative strengths of the four sources of jobs data along the various dimensions identified above:

***Breadth of jobs covered*** – The REIS employment series has the most comprehensive coverage of the four sources. REIS data encompass employment from all sources, including farming and nonfarming, military and civilian, proprietorships (self-employment) and wage and salary employment. CES and ES-202 cover nonfarm civilian wage and salary employment only. Because it draws on existing data sources, County Business Patterns has the most narrow coverage of all – nonfarm, private sector wage and salary workers, not including railroads.

***Frequency and speed*** – Among the four sources, CES data are issued the most frequently (monthly) and with the least lag time between observation and publication (a matter of

weeks). On the other hand, ES-202 data (quarterly) are issued six-to-nine months after the period of observation; REIS state data (annual) come out about eight months after year's end, with metro and county data following eight months later; and County Business Patterns (annual) is published two years after the fact.

***Sample size and accuracy*** – REIS, ES-202 and County Business Patterns each utilize establishment records that encompass the entire universe of their coverage, i.e., a 100 percent sample. So there is no sampling error; accuracy is a function of the accuracy of the records used. The ES-202 data are based on data provided with UI premium payments made by all employers. REIS relies entirely on administrative records collected by others, such as ES-202 and IRS data. County Business Patterns relies largely on a variety of Census Bureau-based establishment records.

Because each uses different records, ES-202 data can differ significantly from County Business Pattern data. For example, an establishment coded for one industry in ES-202 files can be coded for another in Census Bureau files. Moreover, while the REIS and the ES-202 data are annual averages, County Business Patterns data indicate employment levels for one week in mid-March.

The CES Program is the only one of the four series that uses a sampling approach, a monthly survey of a sample of over 390,000 establishments nationwide. The CES is specifically designed for speed, seeking to capture an image of employment patterns in near real time. While complete accuracy is consciously sacrificed for frequency and speed, CES estimates usually are quite well corroborated by the more extensive ES-202 data issued some time later. In fact, our survey of data users indicates that respondents think CES is only slightly less accurate than the three other sources.

***Industry and geographic detail*** – Theoretically, ES-202 data provide the highest level of industry and geographic detail, up to four-digit SIC codes for any geographic area (including zip codes). We say theoretically, because getting at the data can, to use an economists' phrase, have high transaction costs. (See below for ES-202 access issues.)

County Business Patterns also provides up to four-digit detail, and through a relatively new CD-ROM product, at various levels of geography, down to the zip code level. But, other than for zip codes, it cannot provide data on the subcounty level, in contrast to ES-202 data.

CES, because it is based on a sample, cannot provide the same level of industry and geographic detail as the previous two data sources. CES covers states and metropolitan areas, primarily at the one- and two-digit industry level.

REIS has extensive geographic coverage (all states, metro areas, and counties), though at a low level of industry detail compared to the other data sources – two-digit at the state level, and one-digit at the metro and county level.

For decades, the U.S. government has published the Standard Industrial Classification (SIC) code, the set of detailed industry codes used to classify businesses by their principal products. Within the next few years this venerable, though increasingly dated,

classification system will be replaced by a new scheme designed to more accurately characterize contemporary economic activity. The new classification system is called the North American Industry Classification System (NAICS), and will also be used in Canada and Mexico. Unfortunately, historical data will not be reclassified from SIC to NAICS codes, so discerning time series trends will become more challenging.

Through the U.S. Government Printing Office at (202) 512-1800, you can buy a copy of the SIC Handbook and the new NAICS handbook (which provides a handy concordance of the NAICS and SIC codes). You can find information about NAICS at the Census Bureau Web site at: <http://www.census.gov/epcd/www/naics.html>.

**Access** – REIS, CES, and County Business Patterns are readily available on disk and on-line. Because the ES-202 data are so voluminous, and because of the time required to address confidentiality concerns, relatively few ES-202 data are available in print.<sup>5</sup> BLS does publish annual averages for four-digit industries by state, and some states publish data summaries (usually to the two-digit level) in print and on-line. Otherwise, data must be obtained through a specific request to a state LMI agency or BLS for a customized data run, typically for a fee. While some states (e.g., Colorado) are organized to provide relatively quick responses to ES-202 data requests, others (e.g., Indiana) are not.

In addition to the four sources described above, jobs data also are available in the Economic Census and the Annual Survey of Manufactures (ASM). However, these sources do not have the same level of comprehensiveness, detail, and/or timeliness as the other sources. (See section 3.6 for more detail.) Still, the Economic Census and the ASM can serve as useful complements in analyzing job trends for certain industries, areas and time periods.

1. Employment series, Regional Economic Information System, Bureau of Economic Analysis
  - Measures: Annual average employment by SIC industry (two-digit for states, one-digit for other areas). Two industry series provided at the state level – one for total employment (including civilian wage and salary workers, proprietors and military) and one for civilian and military wage and salary employees. Total employment by industry is provided for counties and metropolitan areas.
  - Geography: States, metropolitan areas, and counties
  - Frequency: Annual (time series provided, 1969 through latest year)

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<sup>5</sup> BLS and state guidelines prohibit publication of data that would allow users to determine employment and wage levels for individual employers. The usual rule is that, to be published, a data cell must have at least three UI accounts, with no UI account providing 80 percent or more of jobs in the cell. Individual states can decide on more stringent nondisclosure criteria. Highly specific data requests, in terms of geography and industry, can require a high level of screening for nondisclosure. This process can be very labor intensive, and expensive. Hence one reason for the reluctance to publish large volumes of ES-202 data.

- Method: Data drawn from a variety of existing data series, including ES-202 and IRS data
  - Access: Complete REIS data set can be ordered on CD-ROM from BEA at (800) 704-0415. REIS data series for all states can be downloaded from BEA at [http://www.bea.doc.gov/bea/uguide.htm#\\_1\\_30](http://www.bea.doc.gov/bea/uguide.htm#_1_30). Data for individual states and areas can be found (in .html or .csv) at <http://fisher.lib.Virginia.EDU/reis/>.
  - Assistance: Regional Economic Measurement Division, (202) 606-5360
2. Current Employment Statistics, Bureau of Labor Statistics and state LMI agencies
- Measures: Civilian nonagricultural wage and salary employment, and average hourly wage for production/nonsupervisory workers, by industry (typically one- and two-digit SIC code)
  - Geography: States and most major metropolitan areas
  - Frequency: Monthly, with annual averages
  - Method: Survey of a sample of establishments, primarily through electronic means (touch-tone phone self-response, phone voice recognition, electronic data interchange), supplemented by mail and fax. Data collected and estimates developed through a federal-state cooperative program.
  - Access: Time series for specific areas available on-line at <http://www.bls.gov/790home.htm>. CES data also available in BLS publications – on a monthly basis in *Employment and Earnings*, and in time series form in the periodic publication of *Employment, Hours, and Earnings, States and Areas*. State LMI agencies (see Appendix B) provide monthly reports; many agencies also provide data on Web.
  - Assistance: State LMI agencies, or CES Program at (202) 606-6559 or [data\\_sa@bls.gov](mailto:data_sa@bls.gov)
3. Covered Employment and Wages (ES-202), Bureau of Labor Statistics and state LMI agencies
- Measures: Establishments, workers, payroll, and average wage for establishments covered by state UI laws and the Unemployment Compensation for Federal Employees (UCFE) program. Data available up to the four-digit SIC level.
  - Geography: States, metropolitan areas, labor market areas, and counties
  - Frequency: Monthly data collected and published on a quarterly basis. Annual averages provided as well.
  - Method: Employers provide data in the process of paying unemployment compensation premiums.
  - Access: Summary ES-202 data available from state LMI agencies (see Appendix B), with detailed data possibly available, depending on the state. *Employment and Wages, Annual Averages* (single year, states only, at four-digit level) can be purchased from BLS at (312) 353-1880. Customized data runs (for states, metro areas, and counties) can be obtained from BLS at (202) 606-6567.

- Assistance: State LMI agencies, or ES-202 Program at (202) 606-6567 or [202\\_info@bls.gov](mailto:202_info@bls.gov)

4. County Business Patterns, Bureau of the Census

- Measures: Wage and salary employment (mid-March pay period), annual payroll, and establishments by employment size category, up to four-digit SIC level. Covers all establishments except those in agriculture, railroad transportation, and government.
- Geography: States, metropolitan areas, counties, and zip codes
- Frequency: Annual
- Method: Data are extracted from the Census Bureau's Standard Statistical Establishment List (SSEL). SSEL data on multiestablishment firms come from the annual Company Organization Survey. SSEL data on single-establishment firms come from a variety of sources, including the ASM, Current Business Surveys, and administrative records of the IRS and the Social Security Administration.
- Access: Data for states, counties, metro areas, and zip codes available on CD-ROM at (301) 457-4100. Data for states and counties available in print and at <http://www.census.gov/epcd/cbp/view/cbpview.html>. Metro area data (at the 2-digit level) are available via fax from County Business Patterns staff on request.
- Assistance: County Business Patterns Division, (301) 457-2580 or [cbp@census.gov](mailto:cbp@census.gov).

Other: See section 3.6 for Economic Census and ASM.

### 3.4 Income and Earnings

In some sense, regional economic analysis is about money. At one level, we want to know about *income* trends – the standard of living people can afford, and the extent to which living standards vary from person to person. We are particularly interested in the extent to which people are living in poverty. More than any other type of data, income data tell us how we are doing economically.

Money has another level of data as well – *earnings* from work, usually by industry or occupation. For the purposes of regional economic strategy, we want to understand how well various industries pay, and how wages in one region compare to those for similar work elsewhere.

#### Income

Income has three sources – earnings from work, investments (yielding dividends, interest, and rent), and transfer payments (such as Social Security, pensions, and welfare). Income

data, which are by place of residence, can tell us how much regional income is generated in aggregate, per capita (aggregate income divided by population), and per household (aggregated income divided by households). Per capita income is often used as a proxy for a region's overall standard of living.

Sources of income data include one from BEA (the Regional Economic Information System), and several from the Census Bureau (Consumer Income series, Small Area Income and Poverty Estimates Program, Decennial Census, and American Community Survey).

You may suspect, correctly, that BEA and Census define income somewhat differently. BEA uses the concept of personal income, while Census uses the notion of money income. BEA's definition of personal income is consistent with its approach of taking a comprehensive view of economic activity. **Personal income** is defined by BEA as the current income received by persons from all sources minus their personal contributions for social insurance. Personal income includes both monetary income (including non-paycheck income such as employer contributions to pensions) and non-monetary income (such as food stamps and net rental value to owner-occupants of their homes). Disposable personal income is income available for spending or saving, and is defined as personal income less taxes. BEA's definition of "persons" is quite comprehensive, and includes not only individuals, but also nonprofit institutions that primarily serve individuals, private noninsured welfare funds, and private trust funds.

In contrast, **money income** as defined by Census covers only money income received by individuals (with no subtraction of social insurance contributions) and excludes non-cash benefits. Poverty rates are determined on the basis of money income and so do not reflect the fact that many low-income people receive non-cash benefits. The definition of poverty is fairly complex, and varies by type of household, but essentially the definition concerns the ability of a household to pay for housing and food. (For a discussion of the definition of poverty, see <http://www.census.gov/hhes/income/defs/poverty.html>.)

BEA and Census income series also differ significantly in terms of the unit and purpose of analysis. BEA personal income data are provided in aggregate and per capita, and aim to describe a region's overall level of income. Census money income series largely focus on household median income and poverty rates. The Census Bureau's use of the median, rather than the mean, and the poverty rate reflects its interest in giving a sense of the standard of living across households in an area. As they measure different aspects of a region's income, BEA and Census income data are complementary in combination.

At present, Census does not publish income data below the state level with the same frequency and detail as does BEA. The Consumer Income series, part of Current Population Reports and based on the Consumer Population Survey, does provide annual money income data by state. Census did publish annual estimates of money income for counties and cities, but that data series was discontinued some time ago. In its stead, Census developed the Small Area Income and Poverty Estimates Program, which prepares estimates on the basis of economic models that use a variety of secondary data sources. While very useful, income data under this program are issued only every few



years; the most recent data are from 1993. As we know, data from the Decennial Census are available only once a decade. As with other categories of socioeconomic data, the advent of the ACS will be a great boon to the availability of current small area income data, but full implementation of the ACS is some time away.

Income data provided by the SOI Division of the IRS can be a useful adjunct to BEA and Census data. The SOI Division provides summaries of adjusted gross income data for states and counties as provided by taxpayers on Form 1040. As might be expected, the IRS definition of adjusted gross income differs from the BEA and Census definitions of income.<sup>6</sup> While much of the IRS data are used by BEA in REIS, specific elements (such as use of the earned income tax credit) may be of interest for certain types of analysis.

1. Personal Income series, Regional Economic Information System, Bureau of Economic Analysis

- Measures: Personal income by source, per capita income, and disposable per capita income
- Geography: All measures available for states. Personal income and per capita income available for metropolitan areas and counties.
- Frequency: Annual (time series provided, 1969 through latest year)
- Method: Data drawn from a variety of existing data series, including ES-202 and IRS data
- Access: Complete REIS data set can be ordered on CD-ROM from BEA at (800) 704-0415. REIS data series for all states can be downloaded from BEA at [http://www.bea.doc.gov/bea/uguide.htm#\\_1\\_30](http://www.bea.doc.gov/bea/uguide.htm#_1_30). Data for individual states and areas can be found (in .html or .csv) at <http://fisher.lib.Virginia.EDU/reis/>.
- Assistance: Regional Economic Measurement Division, (202) 606-5360

2. Consumer Income (P60) series, Current Population Reports, Bureau of the Census

- Measures: Median household money income and persons living in poverty
- Geography: States
- Frequency: Annual
- Method: Data collected through the March supplement of the CPS
- Access: Median household money income available in *Money Income in the United States*, on-line at <http://www.census.gov/hhes/www/income.html>. Annual state poverty rates available in *Poverty in the United States*, on-line at <http://www.census.gov/hhes/www/poverty.html>.
- Assistance: Housing and Household Economic Statistics Division, (301) 457-3242 or [hhes-info@census.gov](mailto:hhes-info@census.gov)

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<sup>6</sup> A more detailed comparison of the BEA, Census and IRS definitions of income can be found in the May 1998 issue of the *Survey of Current Business*, the monthly BEA publication. This comparison is available on-line at <http://www.bea.doc.gov/bea/ar/0598rem/box4.htm>.

3. Small Area Income and Poverty Estimates Program, Bureau of the Census

- Measures: Median household money income and poverty rates
- Geography: States and counties
- Frequency: Every few years (1993 now available, 1995 and 1998 to be available)
- Method: Small area estimates based on modeled relations between current income and poverty levels and income tax and program data available for counties and states for years following the Decennial Census
- Access: Data available on-line at <http://www.census.gov/hhes/www/saipe.html>
- Assistance: Small Area Income and Poverty Estimates Program, (301) 457-3182 or [psiegel@census.gov](mailto:psiegel@census.gov)

4. Decennial Census/American Community Survey, Bureau of the Census

- Measures: Household, family, and per capita money income; poverty rates
- Geography: States, metro areas, counties, urbanized areas, cities, places, minor civil divisions, census tracts, zip codes, block groups, and other bounded areas
- Frequency: Decennial Census income data published for years ending in “9” (the calendar year prior to the taking of the census). ACS data to be published annually, as described in section 3.2.
- Method: Data derived from sample survey of U.S. population
- Access: Data from the 1990 Census can be accessed at <http://venus.census.gov/cdrom/lookup>. As they become available, data from ACS can be accessed at [http://www.census.gov/CMS/www/index\\_c.htm](http://www.census.gov/CMS/www/index_c.htm).
- Assistance: For Decennial Census, (301) 457-2422 or [pop@census.gov](mailto:pop@census.gov). For ACS, (888) 456-7215 or [ACS@Census.Gov](mailto:ACS@Census.Gov).

5. Statistics of Income Division, Internal Revenue Service, Department of the Treasury

- Measures: Adjusted gross income (total and selected sources), taxable income (by source), deductions (by type), total exemptions, tax liability, and earned income tax credit
- Geography: States and counties
- Frequency: Annual
- Method: Data are obtained from personal income tax returns (Form 1040)
- Access: Electronic files can be purchased. For details, see [http://www.irs.ustreas.gov/prod/tax\\_stats/soi/soi\\_pub.html](http://www.irs.ustreas.gov/prod/tax_stats/soi/soi_pub.html).
- Assistance: Statistics of Income Division, (202) 874-0410

## Employment Earnings

Employment earnings are the largest component of personal and money income. Earnings data by industry are available in two forms – total earnings and average earnings. Through time series, cross-sectional, and location quotient analyses of **total earnings** by industry, an analyst can see the contribution of each industry to a region's income, trends in the health of that industry over time, and the region's national and international competitiveness in that industry. Examining industrial structure in terms of jobs but not earnings can be misleading, as sectors with high-paying jobs contribute much more to regional income than they do to the job base (and vice versa for low-paying jobs). All jobs are not equal. As economic development in large part is about getting money into people's pockets, knowing how the money flows, or might flow, is key to effective analysis and strategy.

Total earnings by industry, for all or nearly all industries, are provided through three data series – REIS, ES-202 data, and County Business Patterns. Because ES-202 and REIS data come directly from employers and proprietors as a by-product of UI and income tax payments (with penalties for inaccuracy), data from these sources tends to be a little more reliable than those from County Business Patterns, which relies largely on Census surveys. ES-202 and County Business Patterns provide data to the four-digit level, while REIS data are at the two-digit level.

In addition to the three sources mentioned above, earnings data also are available in the Economic Census and the ASM. However, these sources do not have the same level of comprehensiveness, detail, and/or timeliness as the other sources. (See section 3.6 for more detail.) Still, the Economic Census and the ASM can serve as useful complements in analyzing earnings trends for certain industries, areas, and time periods.

**Average earnings** data (annual, weekly, and hourly) allow us to clearly see how well, or poorly, various jobs pay in comparison to other regional industries and the same industry in other regions. Understanding differences in pay levels, and the reasons for these differences, can help practitioners prepare appropriate and achievable industry-specific development strategies. Average pay is a rough proxy for the value added per job.<sup>7</sup> The rationale for the selection of target industries is often made on the basis of pay and value added levels. Average wage data also are available for certain occupations.

Average annual earnings are determined by taking total annual earnings and dividing by average annual number of jobs (both full- and part-time). Average weekly pay is derived by dividing the annual figure by 52 weeks. It is important to remember that annual and weekly pay figures do not distinguish between full- and part-time jobs. A low wage level (e.g., in retail) can in part reflect a high proportion of part-time workers.

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<sup>7</sup> Value added is the price of goods and services sold less the cost of nonhuman inputs such as materials and depreciation of capital equipment. Value added accrues to workers through wages and owners through profits.

The only data source that explicitly gives annual and weekly average pay is the ES-202. An average annual earnings figure can be derived from REIS by dividing total earnings by average annual employment. However, keep in mind that the primary REIS income series covers both wage and salary workers and proprietors, so average earnings data derived from that series likely will not match data from the ES-202 series. You can also compute annual and weekly average pay using the Economic Census and the ASM. We don't recommend computing annual average pay from County Business Patterns because the payroll and jobs data are for different time periods – the payroll data are annual and quarterly, but the employment data are for one week in March.

Average hourly wages are derived directly from survey data, in which employers are specifically asked how much they pay their workers. Three BLS data series provide average hourly wage data, one by industry and two by occupation:

- The Current Employment Statistics (CES or BLS-790) series provides hourly wage data for nonsupervisory workers by industry. CES data come out monthly and speedily; the data are for states and metro areas.
  - The National Compensation Survey (NCS) is an annual survey of hourly wages by occupation for a rotating list of 154 metro and nonmetro areas. The larger metro areas are surveyed each year; smaller metro areas and nonmetro areas rotate in and out of the list.
  - The Occupational Employment Statistics (OES) series is an effort by BLS and state LMI agencies to gain a full picture of occupational structure by industry for the nation, states, and metro areas. The hourly wage data (by occupation and industry) is one product of this effort.
1. Personal Income series, Regional Economic Information System, Bureau of Economic Analysis
    - Measures: Annual place-of-work earnings by industry (including military) to two-digit SIC level. State-level series by industry and metro and county all-industry series available for all workers (including proprietors) and for wage and salary workers. Metro and county series by industry only available for all workers.
    - Other information – see section 3.4
  2. Covered Employment and Wages (ES-202), Bureau of Labor Statistics and state LMI agencies
    - Measures: Total payroll, average annual wage, and average weekly wage, by industry (up to four-digit)
    - Other information – see section 3.3

3. County Business Patterns, Bureau of the Census

- Measures: Annual and first quarter payroll by industry (up to four-digit)
- Other information – see section 3.3

4. Current Employment Statistics, Bureau of Labor Statistics and state LMI agencies

- Measures: Average hourly wage for production and nonsupervisory workers, by industry
- Other information – see section 3.3

5. National Compensation Survey, Bureau of Labor Statistics

- Measures: Average hourly wage (with percentile distributions), by occupation
- Geography: 154 metropolitan and nonmetropolitan areas, on a rotating basis
- Frequency: Annually, 30-35 large metro areas (over 560,000 residents) are surveyed. Smaller areas are surveyed on a less frequent basis.
- Method: Data collected through a survey of 36,000 establishments nationwide
- Access: Data from the NCS and a predecessor survey (Occupational Compensation Survey) are available at [http://www.bls.gov/search/ocwc\\_s.asp](http://www.bls.gov/search/ocwc_s.asp)
- Assistance: Office of Compensation Levels and Trends, (202) 606-6220 or [ocltinfo@bls.gov](mailto:ocltinfo@bls.gov)

6. Occupational Employment Statistics, Bureau of Labor Statistics and state LMI agencies

- Measures: Employment, mean and median hourly wage data for over 750 occupations in over 400 nonagricultural industry classifications (two- and three-digit SIC level)
- Geography: State and metro area
- Frequency: Annual
- Method: Annual mail survey of nonfarm establishments, carried out as a Federal-State cooperative effort
- Access: Data by industry available through state LMI agency. All-industry data for states and areas available on-line at [http://www.bls.gov/oes/oes\\_data.htm](http://www.bls.gov/oes/oes_data.htm).
- Assistance: Occupational Employment Statistics, (202) 606-6569 or [oesinfo@bls.gov](mailto:oesinfo@bls.gov)

Other: See section 3.6 for Economic Census and ASM.

## ***Beyond the Basics***

Having examined the basics of demographic, employment, and income and earnings data, we now can explore other categories of socioeconomic data. These include the cost of living, business operations, international trade, economic resource base, and quality of life. Depending on the structure of your local economy and the kind of study you're undertaking, you may want to look at one or more of these categories as part of your analysis. For each data source, the discussion below does not provide the same level of detail as that above, but gives you enough to get started.

### ***3.5 Cost of Living***

Cost of living can be measured in two ways—across time (rate of inflation) and across space. Looking at the ***rate of inflation*** in the local economy is useful in understanding the extent to which increases in personal income have kept pace with, or exceeded, the real cost of living. The primary source of inflation data is the Consumer Price Index (CPI) prepared by BLS. The CPI is provided for 26 metropolitan areas; multistate averages by city size (e.g., metro areas of over 1.5 million in population in the West) are also given. The CPI includes an overall price index and indices for specific components of consumer expenditures, e.g., housing, medical, and food.

Recently, there has been much controversy over the accuracy of the CPI. In response to these concerns, BLS has restructured the index in light of observations that consumers do change their consumption patterns in light of price increases. CPI data and explanations can be found at <http://www.bls.gov/cpihome.htm>.

For purposes of economic development, regional analysts often want ***multiarea comparisons of the current cost of living***. This is one type of data that the federal government does not offer. We have identified two on-line sources of comparative cost-of-living data: DataMasters at <http://www.datamasters.com/cgi-bin/col.pl>, and Salary Calculator at <http://www2.homefair.com/calc/salcalc.html>. The methodology for each source can be found at the respective sites.

A popular comparative cost-of-living index is that prepared quarterly by the American Chamber of Commerce Researchers Association (ACCRA). The ACCRA index is available only by subscription; however, it can often be found in public libraries or at Chambers of Commerce. The virtue of the ACCRA index is that it allows comparisons between regions on specific categories of expenditure such as housing and food. The perception exists, however, that the index's accuracy is uneven; as data are collected independently by each participating local chamber, the actual data collection methodology may differ from place to place.

### 3.6 Business Operations

#### Inputs And Outputs

After we get a handle on employment and income by industry for a region, we sometimes want to know more. Often it is useful to understand the nature of a regional industry's inputs (e.g., cost and type of materials, capital expenditures, and costs and types of energy) as well as outputs (e.g., quantity, value and destination of shipments, and value added). Such business operations data are provided by the Census Bureau through the Economic Census and the Annual Survey of Manufactures (ASM). The Economic Census, a full-blown census of U.S. business establishments, is carried out every five years for a wide variety of industries (e.g., Census of Manufactures, and Census of Service Industries), and provides some level of geographic detail. Unfortunately, it takes the Census Bureau several years to publish the data.

To address knowledge gaps between Economic Censuses, the Census Bureau carries out the ASM. The ASM provides a subset of the data available in the Census of Manufactures and for states only. The existence of an annual survey in manufacturing reflects the historical importance of that sector. Unfortunately, similar surveys do not exist for other sectors. For this section, we revert to our previous format, and provide more detail below.

#### 1. Economic Census, Bureau of the Census

- Measures: Number of establishments (or companies); number of employees; payroll; measure of output (sales, receipts, revenue, value of shipments, or value of construction work done); and other data particular to industry (e.g., investment in plant and equipment)
- Industries covered: For 1997, mining, utilities, construction, manufacturing, wholesale trade, retail trade, transportation and warehousing, information, finance and insurance, real estate and rental and leasing, professional/ scientific/technical services, corporate management, administrative and support, waste management and remediation, educational services, health care and social assistance, arts/entertainment/recreation, accommodation and food services, and other services. (Sectors for 1992 are less comprehensive.) Data are also provided for enterprises, women-owned businesses, and minority-owned businesses. NAICS codes used for 1997 series.
- Geography: States, metro areas, counties, cities and places, and zip codes
- Frequency: Every five years (for years ending in "2" and "7")
- Method: Census of all known establishments in industry of focus
- Access: Detailed data on 1992 Economic Census can be obtained from the Census Bureau on CD-ROM or in print. Summary data can be obtained on-line; access information available at [http://www.census.gov/econ/www/econ\\_cen.html](http://www.census.gov/econ/www/econ_cen.html). Special data runs provided by the Center for Economic Studies (see

<http://www.census.gov/ces/ces.html> for details). Data availability for 1997 Economic Census discussed at <http://www.census.gov/epcd/www/econ97.html>.

- Assistance: General information on Economic Census, (301) 457-4151 or [econ@census.gov](mailto:econ@census.gov). Contacts for information specific to a particular industry census can be found at <http://www.census.gov/epcd/www/ec97contacts.html>.

## 2. Annual Survey of Manufactures, Bureau of the Census

- Measures: Employment, payroll, value added, cost of materials, value of shipments, new capital expenditures, for manufacturing establishments, up to three-digit SIC level
- Geography: States
- Frequency: Annual, except in years ending in “2” and “7” (for which the Census of Manufactures is published)
- Method: Mail survey of 55,000 manufacturing establishments (in larger firms) and administrative record information from 170,000 smaller, single-location establishments
- Access: Regional data are provided in *Annual Survey of Manufactures: Geographic Area Statistics*, available in print form and on CD-ROM. Detailed data not available on-line at present.
- Assistance: Manufacturing and Construction Division, (301) 457-4673 or [mcd@census.gov](mailto:mcd@census.gov)

Also, federal data are available on certain industries that are not provided through the Economic Census. Other industry-specific sources worth exploring include:

- Energy Information Administration, Department of Energy
- National Agricultural Statistics Service, Department of Agriculture
- National Marine Fisheries Service, Department of Commerce
- National Transportation Data Archive, Department of Transportation

You can find links to these sources at our Web site, <http://www.econdata.net>.

## Taxes as an Indicator of Local Business Activity

Most states have taxes on personal and corporate incomes, retail sales, and real property. Many states prepare useful annual tabulations of tax data that can be used to track economic activity at the substate – usually county-level. The quality and accessibility of these data often varies substantially from state to state, but practitioners report that when available they are among the most useful sources of information. Sales tax data can be used to identify retail trade centers, to identify “leakages” from local communities, and to track consumer spending, often on a month-by-month basis. In addition, many states have special taxes, such as room and occupancy taxes, that are useful for tracking specific industries, like tourism. As there is no comprehensive guide to this type of



information, you'll need to contact your state's Department of Revenue to find out what data are available.

### **3.7 Foreign Trade – Exports**

International trade is an important component of many regional economies, particularly the export of goods and services to foreign countries. The federal government gathers detailed data on exports; some of these data are reported on a state-by-state and metro area basis.

Two principal data series track regional exports. The first is the exporter location (EL) series, which reports the volume of exports by state and metro area based on the location of the exporting firm. The second series is the origin of movement (OM) series, which reports exports based on the location of the firm that manufactured the product.

The data from the two series can differ to the extent the manufacturer is located in a different area than the shipper. Wheat grown in Montana may be exported from Oregon; airplanes manufactured in Kansas may be exported from Washington State, machinery manufactured in Ohio may be exported from New Jersey, and so on. Consequently, the OM and EL series paint different pictures of international trade.

Both the OM and EL series are compiled from the documents exporters file with the Department of Commerce when they ship goods overseas, called Shippers Export Declarations. These documents are designed for compliance with export laws, and not as data gathering instruments. There are some concerns about the quality of the export data, particularly the OM series. In many cases, the location information for the original manufacturer is missing or wrong, which means these statistics should be used with caution.

Both the OM and EL series data are available on-line:

- Annual state and metro EL data can be accessed from the Office of Trade and Economic Analysis, Department of Commerce at:  
[http://www.ita.doc.gov/cgi-bin/otea\\_ctr?task=otea](http://www.ita.doc.gov/cgi-bin/otea_ctr?task=otea)
- Monthly and annual EL and OM statistics for states can be accessed through examining the FT900 supplements at:  
<http://www.census.gov/foreign-trade/www/press.html#supplement>

In addition, adjusted quarterly state data for both the EL and OM series are available for purchase through the Massachusetts Institute for Social and Economic Research (MISER). These data are detailed by state, 2-digit SIC code, country, and value and weight by method of transportation. MISER, which is under contract with the Census Bureau, says it “improves unadjusted trade data from the Bureau by filling in missing industry and state information using an imputation algorithm.” Discussion of MISER export data can be found on-line at <http://www.umass.edu/miser/axes/statex.html>.

### **3.8 Economic Resource Base**

Each regional economy has a series of institutions that provide critical foundation resources for economic development, such as research and development (R&D) institutions, educational institutions, and financial institutions. Several federal agencies provide information on the regional economic resource base, including:

- Division of Science Resources Studies, National Science Foundation, for information on R&D activity at universities, federal laboratories, and corporations
- National Center for Education Statistics, Department of Education, for data on K-12 schools, colleges, and universities
- Federal Financial Institutions Examination Council National Information Center, for information on individual banks

You can find links to these sources at our Web site, <http://www.econdata.net>.

### **3.9 Quality of Life**

Quality of life is measured by more than just income – money can't buy us love and many other things. So it can be useful to see how we are doing in terms of our ability to find housing, stay healthy, and keep out of harm's way. Federal agencies that provide quality-of-life data include:

- National Center for Health Statistics, Department of Health and Human Services
- Housing and Household Economic Statistics Division, Bureau of the Census, Department of Commerce – prepares the American Housing Survey, housing statistics from the Decennial Census, and an annual report on housing vacancy and homeownership
- Bureau of Justice Statistics, Department of Justice

You also can find links to these sources at <http://www.econdata.net>.

## **Chapter 4**

### **Data Intermediaries: Guides in the Statistical Jungle**

As Tom Sawyer observed in whitewashing the fence, the easiest way to get your work done is to find others who'll do it for you. One of the great strengths of the statistical system is the number of data experts and knowledgeable guides who work with the data on a daily basis. They can be of immeasurable help in locating and understanding socioeconomic data for your local economy.

#### ***4.1 Census Data/Information Centers***

To facilitate access to its statistics, the Census Bureau sponsors three programs through which approximately 1,800 state and local organizations receive and disseminate Census data products:

- State Data Centers (SDCs) – make Census data and related services available to users.
- Business and Industry Data Centers (BIDCs) – complement the work of SDCs, and focus especially on economic data and assistance to businesses and economic development agencies in their respective states.
- Census Information Centers (CICs) – seek to disseminate Census data to special population groups, particularly those less likely to use SDC/BIDC participants.

Each state has an SDC program, and many have BIDC programs. In each state in which it operates, each program has a lead agency, one to six coordinating agencies, and a number of affiliates. For the most part, participating organizations are academic institutions, state planning agencies, and libraries.

Usually, these Census data centers have staff well-trained in the use of Census and other socioeconomic data. The centers often maintain complete collections of Census data series, from historical publications to CD-ROM versions of the latest data series. Census data centers are usually at the hub of networks of data users, so they also can refer you to other researchers and analysts tackling similar problems. To find the nearest data center, you can call your lead State Data Center (see Appendix A) or visit the State Data Center Web site at <http://www.census.gov/sdc/www/sdctxt.html>.

#### ***4.2 State Labor Market Information Agencies***

As an element of the federal-state partnership to provide unemployment insurance and a state labor exchange, every state has a labor market information (LMI) agency that compiles, publishes, and analyzes a wide range of labor-related information. Chapter 3

described key data series prepared by the LMI agencies with guidance and funding from the Bureau of Labor Statistics (BLS).

Most LMI agencies also have a group of regional labor market economists, each of whom specializes in the economy of a particular substate area, usually a group of counties. Usually, the regional economists are quite knowledgeable about data available from the LMI agency and other sources. We have found it quite valuable to get to know these economists.

To help you gain access to the LMI data and economists, we've provided a list of LMI agency contacts in Appendix B (which also is available at <http://www.bls.gov/ofolist.htm>).

### **4.3 College and University Business and Economic Research Centers**

In the majority of states, one or more colleges and universities operate research centers that compile data on and research the state economy. Typically, these centers prepare regular publications that analyze the current health and structure of the state economy and local economies within it, provide library and Web access to a variety of data sources, and serve as a valuable resource to data users within the state. Most of these centers are members of the Association for University Business and Economic Research (AUBER). Many are also part of the Census SDC/BIDC system. The AUBER Web page at <http://www.auber.org/docs/mail1.htm> provides contact information for business and economic research centers in 36 states.

### **4.4 BEA User Group**

The Bureau of Economic Analysis (BEA) makes its regional estimates available through the BEA User Group, members of which include state agencies, universities, and Census Bureau SDCs (i.e., an amalgam of the intermediaries discussed in the previous three sections). BEA provides its estimates of income and employment for all States and counties to these organizations with the understanding that they will make the estimates readily available to data users. The User Group has its beginnings in the pre-Internet, pre-CD days; User Group members were the primary means of transmitting BEA regional data around the U.S. Among data intermediaries, members of the BEA User Group are more likely to be familiar with economic development issues than are non-members. The list of User Group members can be found at the AUBER Web site, <http://www.auber.org/>.

### **4.5 Federal Depository Libraries**

The Census Bureau and other federal statistical agencies distribute their publications (and also their electronic products, like CDs) to local libraries throughout the nation. Many of these libraries have special government documents librarians who are familiar with the

broad range of sources of socioeconomic statistics. These librarians also can serve as knowledgeable guides to the resources that are available through the Internet, as well as some sources of commercial information.

Libraries that regularly receive federal statistical publications are members of the Federal Depository Library Program (1,400 libraries) or the Census Depository Library System (an additional 130 libraries). Not all libraries receive all publications, so it is important to call ahead to see if they have what you need. But even if they lack certain publications in hand, most libraries should be able to help you navigate the Internet to find needed data. The location of libraries in the Federal Depository Library Program can be found at [http://www.access.gpo.gov/su\\_docs/libpro.html](http://www.access.gpo.gov/su_docs/libpro.html). Those in the Census Depository Library System can be found in Appendix B of the *Census Catalog & Guide: 1997*, which you can download from <http://www.census.gov/prod/www/abs/catalogs.html>.

### **4.6 Chambers of Commerce**

In many communities, the local chamber of commerce has a research function, gathering data about the local economy. The economists and researchers who work for chambers of commerce across the country are members of the American Chamber of Commerce Researchers Association (ACCRA). ACCRA members are likely to be very conversant with a range of economic statistics about the local area. You can find out whether there are any members of ACCRA in your area by searching the ACCRA Web site at: [http://www.accra.org/networking\\_comm/Search\\_criteria.cfm](http://www.accra.org/networking_comm/Search_criteria.cfm).

### **4.7 Data Agencies**

Federal statistical agency personnel are an excellent, accessible source of information on data series produced by that agency. If you have a question about a particular data series, you can call the office that produced that series. Most federal statistical personnel are happy to give you assistance in their area of expertise (and usually are glad to know someone is interested in their work). In Chapter 3, we provided contact information for most of the data series discussed. Also, most federal statistical publications and Web sites identify the staff persons with expertise on individual data series.

Census and BLS provide another venue for examining statistical publications and getting technical assistance – regional offices. These offices have libraries filled with agency publications going back decades, and are an excellent means of finding historical data that are not available on-line. Regional office personnel are available to answer questions and provide information. Addresses and contact information for the 12 Census regional offices can be found at <http://www.census.gov/field/www/> and for the eight BLS regional offices at <http://www.bls.gov/reghome.htm>.

#### **4.8 On-Line Guides**

These days, some of the best data intermediaries are Web sites. A number of Web sites provide commentary and travel guides to the places on the Internet where you can find various types of data. We've listed many of these sites in Chapter 7, The Web's Twelve Best Sources for Economic Information. For beginners, we recommend University of Minnesota's Web page "Guide to On-Line Sources for Economic Development Information" and Oregon State University's Government Information Sharing Project.

## ***Part Two: Lessons of Practice***

### **Chapter 5**

#### **Ten Habits of Highly Effective Data Analysts**

To appraise the effectiveness of the current regional socioeconomic data system, we contacted several hundred experienced data analysts. Through surveys, interviews, and focus groups, we discovered much about analysts' best practices and lessons learned. We've boiled these practices and lessons down to the following Ten Habits of Highly Effective Analysts:

##### ***5.1 Tap the Resources of the Web***

The World Wide Web is revolutionizing access to socioeconomic data. Just a few years ago, the only ways to get data into your desktop computer were to tediously retype the tables from printed publications, purchase a disk, or buy data on computer tape and sift through it with a mainframe computer application program. Now, however, most federal data are available through the Web, and many series can be downloaded directly into computer spreadsheets for tabulation and analysis. Complete publications – like the *Statistical Abstract of the United States* and the *State and Metropolitan Area Data Book* – are also available on-line in the Adobe Acrobat (.pdf) format. Several Web sites, such as the Dismal Scientist, offer easy to use "front-ends" that let you make simple data queries, such as ranking all the states by average employment growth in the past year.

While the extent of resources on the Web is daunting, it's important to keep in mind that the availability of Web-based economic statistics is still in its infancy. Expect more and more statistical information to be made available over the Web in the years to come, and easier-to-use and more powerful tools for finding and analyzing just the data you need. Becoming proficient in using the Web to do socioeconomic data research is an essential skill of an effective data analyst.

##### ***5.2 Network with Your Peers***

On its face, data analysis seems like a lonely occupation: a computer, a pile of statistics, and an analyst. In practice, our study of the experience of analysts shows that knowing how to communicate with and learn from peers is an essential skill for the effective data analyst. The majority of data analysts report that, to a large extent, they learned about data sources and analytical techniques through informal communication with their peers. Moreover, our research shows that analysts with the highest rated skill levels tend to be those who rate their satisfaction with opportunities for peer collaboration most highly.

Effective analysts find several ways to network with their peers. Much of the informal interaction with peers goes on in the office, of course, and you may be lucky enough to be in an organization that allows for such interaction. Also, networking occurs across organizations in the same area through the process of projects and meetings. Further, a number of professional organizations promote peer interchange among data analysts, through national conferences and local chapters. (We've included a list of such organizations in Appendix C.)

In addition, the Web itself is becoming a medium for the interchange of ideas and experiences, through discussion groups on economic development policy and on economic research. You can subscribe to electronic mailing lists and discussion groups, to stay up with current developments in professional practice on a real-time basis.

Networking, fundamentally, is a people skill, and some number-crunchers are better at it than others. You're on your own in this regard. However, we can say that you might find out how various professional organizations provide opportunities for networking as part of their activities, and take advantage of those options best suited to you. You can visit their Web sites (listed in Appendix C) to find out more about membership, activities, and services.

### **5.3 Equip Yourself with the Essential Data Sources**

One of the best ways to become familiar with the range of available data, as well as quickly answer many questions that come out of the blue, is to have several essential data resources close at hand. In Chapter 6, we highlight a number of data reference books we think should be on every economic data analyst's bookshelf. These include data compendia such as *The Statistical Abstract of the United States*, annual data sets such as the Regional Economic Information System CD-ROM, and guides to statistical agency products and methodologies, such as the *Census Catalog & Guide*. Of course, you'll want to tailor your collection to your own needs and interests.

### **5.4 Tell Stories and Paint Pictures with Data**

Our survey respondents emphasize that good presentation is critical to having an impact on decisions. The sad truth is that, while impressive and lengthy tables of numbers may be compelling to the analyst, they are seldom interesting (and are often unintelligible) to most audiences that read them. The burden of making sense of the data should be on the analyst, not the audience. As discussed in Chapter 1, effective data analysts know how to tell a coherent, internally consistent, truthful story about the economy, one that develops themes, patterns, and conclusions that inform decision makers and other readers. Simple summaries of trends and data, with compelling graphs and charts, are among the most effective means of communicating the information hidden within reams of data.



### **5.5 Utilize the Power of Basic Analytical Techniques**

The enormous power of the personal computer can be seductive – it puts a range of statistical tools within the reach of every analyst. All major spreadsheet programs, for example, contain sophisticated regression functions. Tempting as it is to use the high-powered analytical techniques at one's disposal, the experience of practitioners is that the basic analytical tools, such as calculating averages, growth rates, and percent distributions, are the means of first resort in translating socioeconomic data into worthwhile information about a local economy. These junior high school math techniques allow analysts to quickly describe the outlines of economic activity, identify possible explanations for trends, and ascertain issues and opportunities to be addressed, and then transform these findings into effective stories for lay audiences.

Outside of academia, few analysts utilize advanced statistical techniques, which are valuable for focusing on high levels of economic detail and for addressing particular questions or hypotheses. Moreover, for a number of advanced techniques, such as economic modeling, sufficient data often do not exist, making the use of the technique problematic (or expensive, if primary data need to be collected). Even when data are available, advanced techniques can be time- and labor-intensive (that is, have high opportunity costs), and their conclusions may not be fully defensible.

In general, the lesson seems to be, don't lose the forest for the trees, that is, don't employ advanced statistical techniques until you've captured an overview of economic activity through the basic math approaches. And even then consider, as many analysts do, following up basic analysis, not with advanced techniques, but with primary research efforts, such as surveys and interviews, to fill in knowledge gaps.

### **5.6 Make Use of Data Intermediaries**

Often, the hardest part of data analysis is finding your way through the jungle of possible sources of data to the one that can best answer your question. The enormous set of available resources, both in print and on the Web, are of little use if you can't find what you need. Fortunately, data intermediaries are available who know the lay of the land and who can help you find your way to the right data sources. Building relationships with your Census data center staff, the economists at your state labor market information agency, and the closest chamber of commerce with a research office can save you hours of frustration.

### **5.7 Think Regional**

Citizens and decision makers often want data for very small geographic areas: my neighborhood, my district, my city. However, as discussed in Chapter 1, political boundaries seldom coincide with economic boundaries; workers, businesses, and consumers readily move across jurisdictions, taking their economic impacts with them. Experience shows that jurisdiction-specific economies are often best understood by first

looking at the regional patterns of economic activity, typically across a county or groups of counties. To be an effective analyst, it is vital to place economic activity in a particular neighborhood or area in the context of the health and functioning of the regional economy of which it is a part.

## **5.8 Prepare for the American Community Survey**

Of course, even if you want up-to-date data on a district or neighborhood, you probably can't get it from the federal government anyway. Except for those rare moments when the last Decennial Census is relatively current, data below the city and county level are difficult to come by. The ten-year wait is the biggest complaint that data users have about the Decennial Census.

As discussed in Chapter 3, the Census Bureau is aiming to address the issue of Decennial Census timeliness by implementing the American Community Survey (ACS). The ACS is a monthly survey, with annual data publication, using the long form of the Decennial Census questionnaire to provide data on population, income, and housing. Once fully implemented, the ACS will have the potential to greatly expand our understanding of the year-to-year dynamics of our local economies, particularly the connections between economic activity, residents' economic well-being, and the components of population change.

At full implementation, the ACS will achieve the same sample size as the long form of the Decennial Census – 17 percent of households. However, the ACS will achieve this sample size over a five-year period – in any given year, it will survey fewer people than the Decennial Census. This isn't a particular problem for large geographic areas like states and metropolitan areas, where enough persons will be sampled to produce statistically valid results on an annual basis. But for smaller geographies, less populous counties, small cities, and census tracts and smaller units (any area with less than 65,000 people), one year's data won't be enough to generate a statistically valid estimate. For these smaller geographies, the ACS will average several years' worth of data to produce its estimates.

In another change from traditional practice, the ACS will report the confidence interval for data point estimates, so that analysts can more accurately interpret the results. Data users and policy makers will need to shift their thinking from a focus on point estimates to one of confidence intervals.

The Census Bureau began the ACS implementation process in 1996. By 2001, population characteristic estimates generated by the ACS will be available for all states and geographic areas and population groups with 250,000 or more in population. By 2008, estimates will be available for all areas of the country, regardless of population size.

For communities lucky enough to be an ACS test site, the available data are already being put to good use. Neighboring communities, we are told, are jealous and look forward to getting their own data.

Data analysts would do well to get ready for the coming of the ACS through taking a number of steps, including:

- learning about the ACS approach, methodology and data framework, by visiting the ACS Web site at <http://www.census.gov/CMS/www/>;
- checking with the Census Bureau at [ACS@Census.Gov](mailto:ACS@Census.Gov) or (888) 456-7215 to see when data for your area or community will become available;
- thinking ahead about the types of analyses that will become possible once ACS data are available;
- calling local government agencies in one or more of the 1996-97 test sites (including Rockland County, New York; Houston, Texas; and Portland, Oregon) and asking how they use the data; and
- writing Congressional Representatives and Senators in support of the ACS, in order to ensure long-term funding by demonstrating that a constituency for the data exists.

### ***5.9 Explore the Lesser Known Data Sources for Special Information***

Regional data users tend to rely on the three major statistical agencies (the Census, the Bureau of Labor Statistics, and the Bureau of Economic Analysis) for most of their socioeconomic data needs. While these three agencies do have a broad and deep set of statistical data, effective data analysts also utilize a number of other federal agencies whose specialized data are useful in answering questions on particular topics. For example, if an analyst wants to analyze agriculture or the farm sector, the Economic Research Service of the Department of Agriculture is an invaluable source of information about farm sales, crop prices, international markets, farm income, and rural development. The National Center for Education Statistics has a wealth of detailed, state-by-state information on education spending, higher education programs, and educational attainment. The National Center for Health Statistics is a repository of information on health, disease, and demography. With over 70 federal agencies in the data business, the trick is to find the ones relevant to the particular issues of interest. To see an overview of data providers and series beyond the Big Three, we suggest going to our Web page of data links at <http://www.econdata.net>.

### ***5.10 Work to Bolster the System***

For gaining an understanding of our economic lives, federal data are invaluable and irreplaceable. For reasons of cost and legality, no single private organization can replicate the data work of the federal government in terms of breadth, reliability, and consistency.

Because of budget cuts over the last decade, federal statistical agencies face difficult choices in deciding which data series to keep and which to cut. In making these choices, agencies often have limited information about who uses the data and for what purposes. In this difficult budget environment, the only way to be sure that the data you need will

still be around (and even improved) in a few years is to be an informed and vocal consumer of statistics.

Moreover, the economy is changing and developing in ways that our current statistics don't fully capture. The lack of good information about worker skill levels, for example, seems to be a widespread concern. It is valuable to let statistical agencies know about the types of data series you would like to see brought into being.

For the health of our socioeconomic data system, it is critical to communicate with federal data agencies to let them know which data series you find useful, as well as your complaints and suggestions for improvement. You can send your message by using the e-mail addresses provided on the various data agency Web sites. It also doesn't hurt to let the consumers of your data (decision makers in the public and private sector) know that your analysis depends on (and could be improved by) better federal statistics.

## Chapter 6

### Bookshelf Basics for Economic Analysts

While the Internet is an extraordinarily important tool for gathering socioeconomic data, not all data are available through that means. Moreover, if you don't know what you are looking for, the Internet is not very helpful. Certain data sources and narrative guides are very valuable to have close at hand for easy reference. Here is a list of publications (and CDs) you should consider adding to your library, if you don't already have them.

#### 6.1 Data Reference Books and CDs

##### Statistical Abstract of the United States: 1998

If you are building your reference library from scratch, begin here. The *Statistical Abstract* is a compendium of the most frequently used data series produced by the federal government, and includes data from all the major statistical agencies. The book is very helpful in getting a sense of the kinds of data the federal government produces. Chapter introductions provide key concepts and definitions. While the primary focus of the *Statistical Abstract* is national data, it has state and metro area breakouts of key data series. Though the *Abstract* is available on the Web in Adobe Acrobat (.pdf) format, at <http://www.census.gov/prod/3/98pubs/98statab/cc98stab.htm>, in our opinion, it's handy to have on a bookshelf or CD-ROM within arm's reach. You can order this publication from the U.S. Government Printing Office (GPO) at (202) 512-1800 or from National Technical Information Service (NTIS) at (800) 553-6847.

##### Regional Economic Information System

Maybe the best buy you can make in getting regional economic data is to spend \$35 on the REIS CD-ROM issued annually by the Bureau of Economic Analysis (BEA). This single CD-ROM contains more than 25 years' worth of income and employment data for every county, metropolitan area, and state. Also, it is loaded with digital versions of much of the background information and reports that explain the methodology of BEA publications. While you can find much of the data contained in this CD-ROM on the Web, having the CD-ROM is the fastest, easiest way to track down data for any particular area. To order, call BEA at (800) 704-0415.

##### State and Metropolitan Area Data Book: 1997-98

##### USA Counties: 1996

##### County and City Data Book: 1994

The Census Bureau publishes three statistical compendia that focus on specific levels of subnational geography – the *State and Metropolitan Area Data Book*, *USA Counties*, and

*County and City Data Book*. As with the *Statistical Abstract*, these compendia bring together a wide variety of socioeconomic data from the Census Bureau and other federal and private data sources. Each of these sources is full of rankings by various categories, which can help you quickly compare your area to others. Each publication does carry state data (despite titles that might lead you to think otherwise). The *State and Metropolitan Area Data Book* covers 273 metro areas; *USA Counties* covers 3,100 counties; and the *County and City Data Book* covers the same number of counties, 1,100 cities, and 11,000 places. *USA Counties* actually is a compendium of compendia; available only on CD-ROM, the publication provides county data from all editions of *State and Metropolitan Area Data Book* and *County and City Data Book* since 1982, as well as data available to the time of publication.<sup>8</sup>

Unfortunately, the *State and Metro* book and the *County and City* book come out only every four to six years; there is no regular schedule. Moreover, as the data come from existing sources, they usually are one to two years behind the date on the cover of the compendium. The *USA Counties* CD-ROM came out for the first time in 1996. Even though the data may not be current, these compendia are an excellent way to understand the range of data available. With the help of the compendium, you can track more recent data.

These publications are available in print (except for *USA Counties*) and CD-ROM. Print publications can be ordered from the GPO at (202) 512-1800 and NTIS at (800) 553-6847. CD-ROMs can be ordered from the Census Bureau at (301) 457-4100. Also, the *State and Metropolitan Area Data Book* is available for download at <http://www.census.gov/statab/www/smadb.html>.

## County Business Patterns

The Census Bureau's printed publication of *County Business Patterns* comes out annually, with one report for each state. In print, *County Business Patterns* provides state and county level information on private-sector nonagricultural establishments, employment, and payroll by four-digit SIC code, with establishments by employment-size class. The latest year available is 1996. You can purchase the print report for your state from the GPO at the above phone number or download it for free in Adobe Acrobat (.pdf) format at <http://www.census.gov/prod/www/abs/cbptotal.html>.

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<sup>8</sup> For those wanting to obtain a more comprehensive set of data specific to one or more counties, the Census Bureau provides customized CD-ROM compendia, under the name *CountyScope*, that gather data from over a dozen Census data series. These series include demographic and housing data from the 1990 Decennial Census (including the full set of PUMS records) down to the block and block group level; economic data from recent Economic Censuses (at the zip code level), County Business Patterns and ZIP Code Business Patterns data; a decade of Consolidated Federal Funds Reports (on federal expenditures and obligations); and geographic data from the Census Tract Street Index. The contents of *CountyScope* can be found at <http://www.census.gov/ftp/pub/mp/www/rom/sumco.html>. Cost is \$400 for the first metro county (\$300 for non-metro), and \$100 for each additional metro county (\$60 for non-metro). CDs can be ordered at (301) 457-4100.

Typing from printed publications or waiting for downloads from the Internet can be frustrating. You can get County Business Patterns data on CD and save the wait. The latest CD, with two year's worth of data for \$150, can be ordered by phone at (301) 457-4100. You can also get a single year's worth of zip code level data (for 30,000 zip code areas) for \$90. Remember, though, because of confidentiality restrictions, much of the detailed information at the zip code level is suppressed.

### Your State's Covered Employment & Payrolls (ES-202) Annual Report

Each year, each state prepares an annual compilation of ES-202 data. (See Section 3.3 for a description of these data.) While the contents vary from state to state, these publications typically include highly detailed data on employment, payrolls, and numbers of firms (often by the four-digit level of SIC detail for the state), and frequently by the two-digit level of detail for counties. Some states also include a variety of historical tables and narrative analyses. Pricing and availability vary from state to state. For more information, contact your state LMI agency listed in Appendix B.

### Economic Census, Geographic Area Series

Conducted once every five years (in years ending in “2” and “7”), the Economic Census is an invaluable source of detailed information about investment, productivity, sales, and other characteristics of business in almost every industrial sector. For the 1997 Economic Census, the following sectors are covered: mining, utilities, construction, manufacturing, wholesale trade, retail trade, transportation and warehousing, information, finance and insurance, real estate and rental and leasing, professional/scientific/technical services, corporate management, administrative and support, waste management and remediation, educational services, health care and social assistance, arts/entertainment/recreation, accommodation and food services, and other services.

For each specific sector, the Census Bureau publishes a Geographic Area Series (one report for each state), containing up to four-digit SIC data for states, metro areas, counties, and places. Unfortunately, the latest data available are from the 1992 Economic Census; the 1997 data should be available in 1999-2000. The CD-ROM of the entire Economic Census, or individual state reports for sectors of interest, can be ordered from the GPO or NTIS at the numbers above. Also, you can download state reports in .pdf format by going to <http://www.census.gov/epcd/www/92results.html>.

### U.S. Industry and Trade Outlook

A one-time casualty of budget cuts, this publication has been resurrected by a partnership between the International Trade Administration and McGraw-Hill. Although most of the information in the book is national in scope, the *U.S. Industry and Trade Outlook* is an invaluable source of industry-by-industry analysis of recent trends in employment,

productivity, investment, and exports. Organized by major industry, each section contains information on world market share by nation, U.S. import and export position, total output and output by worker, as well as detailed data on recent trends and forecasts of future activity. Each subject area contains references including trade publications and industry associations, as well as contact information from Department of Commerce staff experts.

If you want to get a good handle on how an industry is performing, and some insights into the competitive situation U.S. producers face in the world economy, this is the resource to get. At \$70 per copy, it is more expensive than the other publications listed here, but well worth it, in our opinion. Most of the chapters are authored by Commerce Department experts, with others written by McGraw-Hill staff and independent experts. You can order this publication by phone from the NTIS at (800) 553-6847. It's also available in bookstores. Much of the statistical information from the publication is accessible at [www.ita.doc.gov/outlook](http://www.ita.doc.gov/outlook). And, for reference, the full text of the 1994 version of the *Outlook* is available at [gopher://gopher.umsi.edu/11/library/govdocs/usio94](http://gopher://gopher.umsi.edu/11/library/govdocs/usio94).

### Digest of Education Statistics

Produced by the National Center for Education Statistics, an arm of the Department of Education, this helpful compilation provides data on educational institutions and programs, spending on schools and colleges, and educational attainment. A large number of data series are broken out on a state basis. This 530-page publication is available for free by calling (800) 424-1616, and is available for download at <http://nces.ed.gov/pubs/digest97/>.

### Business Directory CDs

Often, it's useful to get the names and addresses of specific businesses in an area. A problem with many public records sources – like payroll tax records – is that they can't be used to generate identifiable information about individual firms. With the advent of CD-based business directories, it's easy to get basic information about almost any business, including firm name, street address, city, state, metro area, zip code, and SIC code. Inexpensive commercial business directories are available on CD. Many of these directories include latitude and longitude information about specific businesses, which are extremely useful for geographic information systems (GIS) and mapping applications. A representative list of products includes:

- *Listings Deluxe* by ProCD (see [www.procd.com](http://www.procd.com))
- *Phone Disc Business Pro* by Digital Directory Assistance (see [www.phonedisc.com](http://www.phonedisc.com))
- *Phone Search USA 4.0* by DeLorme (see [www.delorme.com](http://www.delorme.com))



## 6.2 Narrative Guides to Data Products, Methodology, and Analysis

### Census Catalog & Guide

It's difficult to comprehend just how much information the Census Bureau does generate. This thumb-indexed 340-page document provides descriptions of a wide selection of Census publications, CDs, computer tapes, and diskettes, and also pinpoints information available over the Web. The *Census Catalog & Guide* can save hours of trying to find which publication or electronic resource is most likely to have the data you need. Its appendix is a useful resource itself, providing lists of Census data centers, Federal Depository Libraries, and federal statistical agencies, and an overview of data publications of eight agencies other than Census.

The most recent full version of the document was published in 1997; an update was issued in 1998. You can order a copy of the catalog from the GPO at (202) 512-1800, or download it for free at <http://www.census.gov/prod/www/abs/catalogs.html>. The most up-to-date listing of Census products can be found on-line at CenStore, <http://www.census.gov/mp/www/censtore.html>.

### BLS Handbook of Methods

The *BLS Handbook of Methods* provides detailed descriptions of the survey and statistical methods that the Bureau of Labor Statistics uses to compute everything from unemployment rates to the Consumer Price Index. It is a valuable resource for correctly interpreting very important, and often misunderstood, data series. The latest version was released in April 1997. You can get this publication on-line at [www.bls.gov/opub/hom/homhome.htm](http://www.bls.gov/opub/hom/homhome.htm) or order the printed version from the GPO at (202) 512-1800.

### BEA Catalog of Products

The Bureau of Economic Analysis annually produces a succinct guide to its data series and products – the *BEA Catalog of Products*. The *Catalog* is available from BEA at (202) 606-9900 and can be obtained on-line at [www.bea.doc.gov/bea/uguide.htm](http://www.bea.doc.gov/bea/uguide.htm).

### Community Economic Analysis: A How To Manual

This book by Ronald Hustedde, Ron Shaffer, and Glen Pulver is a good introduction to many of the techniques of regional economic analysis. In a simple question-and-answer format, this publication explains how to use economic data to analyze your local economy. You can order a copy for \$5.00 by calling the North Central Regional Center for Rural Development, Iowa State University at (515) 294-8321. The table of contents can be found at <http://www.ag.iastate.edu/centers/rdev/comm.ec.analysis-cont.html>.



## Chapter 7

### The Web's Twelve Best Sources for Regional Data

As evident throughout this guide, the World Wide Web has become a very important means for directly accessing a wide variety of socioeconomic data. A data input process that just four years ago required a trip to the library, a photocopy machine, and typing in data points one by one, now can be accomplished with a few clicks of the mouse.

Picking the best of anything can be a difficult and subjective chore. It's quite challenging when the subject is as vast and fast-changing as data sites on the World Wide Web. Our list is based on a combination of the highest vote-getters in our data users survey and our own experience. To make it simple, we had wanted to give you a list of the ten best, but, frankly, there are too many good sites to pass up, so we offer twelve. Below you will find the twelve sites that we think every regional economic analyst should know about.

These sites are divided into three major groups. The first group is made up of sites sponsored by the agencies that produce the data. If you know what you want, this is the direct route to the source. The second group contains sites that provide access to a range of data from a variety of sources. They have user-friendly interfaces and often provide helpful advice about how to use the data. The third group is made up of Web site directories, ones that offer an encyclopedic listing of what's available on the Web, with hyperlinks and a minimum of narrative. These sites provide you with the broadest view of Web data sites. If you are not sure what data exist on a certain topic and where to find them, check out these sites.

#### ***7.1 Statistical Agency Sites***

When we polled socioeconomic data users about the sites they use most frequently, the sites of the Big Three federal statistical agencies accounted for half of the votes. These sites are useful not only because they can take you to popular and frequently used data series, but they include contact information, descriptions of the methodology used to produce the data series, and calendars of upcoming data releases. (See Chapter 3 for a more detailed discussion of the various data series described.)

#### **Census Bureau**

The Census Bureau site at <http://www.census.gov> will lead you to the full range of popular and obscure Census data series. The site has a comprehensive A-to-Z listing of data subjects, as well as an on-line search feature. Among the places you might visit are the following:

- The Decennial Census of Population and Housing, at <http://www.census.gov/main/www/cen1990.html>, is the most comprehensive source of data

about the nation's households. Through an easy-to-use lookup function, you can get a customized data printout on the characteristics of large and small areas, including demographics, occupation, journey to work, and economic status of families and households.

- The Economic Census, at [http://www.census.gov/econ/www/econ\\_cen.html](http://www.census.gov/econ/www/econ_cen.html), is an invaluable source of detailed information about investment, productivity, sales, and other characteristics of business in almost every industrial sector. Collected and published for years ending "2" and "7," data are available by states, metro areas, counties, cities and places, and zip codes.
- The Population Estimates Program, at [www.census.gov/population/www/estimates/popest.html](http://www.census.gov/population/www/estimates/popest.html), gives you current estimates of population, components of population change, and characteristics such as age and race, for a full range of geographic levels.

## Bureau of Labor Statistics

The Bureau of Labor Statistics (BLS), at <http://www.stats.bls.gov>, has a wealth of information available through its Web site, and through the Web sites of its partner state LMI agencies. The BLS Selective Access feature makes choosing and downloading data points by area quite straightforward. Three major BLS data series are especially valuable to analysts of regional economies:

- The Current Employment Statistics Program, at <http://stats.bls.gov/790home.htm>, provides monthly employment estimates by industry for states and metro areas.
- The Local Area Unemployment Statistics Program, at <http://stats.bls.gov/lauhome.htm>, prepares monthly labor force data for 6,700 areas around the U.S., including states, metro areas, counties, and cities of more than 25,000.
- The Consumer Price Index (CPI) Program, at <http://www.bls.gov/cpihome.htm>, gives an overall price index and indices for specific components of consumer expenditures, e.g., housing, medical, and food. The CPI is available for 26 metropolitan areas, and multistate averages by city size (e.g., metro areas of over 1.5 million in population in the West).

## Bureau of Economic Analysis, Regional Accounts Data

The Bureau of Economic Analysis (BEA) makes its Gross State Product and Regional Economic Information System (REIS) files available through its Web site at

<http://www.bea.doc.gov/bea/dr1.htm>. You can also use this site to access BEA's national income account data and its publication of record, the *Survey of Current Business*.

Unfortunately, BEA does not make substate REIS files available on the Web. However, you can access these through the Government Information Sharing Project (Oregon State University) or the Geospatial and Statistical Data Center (University of Virginia), both described below.

## **7.2 Cross-Source Data Guides and Repositories**

The sites in this group offer access to a range of data series from a variety of sources. They help data users find and download just the data they want, and some offer guidance on their use.

### **Guide to On-Line Sources for Economic Development Data, University of Minnesota**

The University of Minnesota's State and Local Policy Program has developed an excellent site, at <http://www.hhh.umn.edu/Centers/SLP/edweb/>, to explain how to find and use economic data for economic development purposes. If you're just starting out to use economic data on the Web, this is a good place to begin. This site provides detailed, step-by-step instructions on how to find and use a variety of federal agency data, and has a very good list of Web links to state-specific data sources. The site also has step-by-step how-to instructions on calculating location quotients, shift-share analyses, and other methods of analyzing the data. Unlike the sites listed just below, this one does not have data on its own server – it gives you the link to the source site. In that sense, this site is a high value-added directory of Web data sites.

### **Government Information Sharing Project, Oregon State University**

Oregon State University hosts the Government Information Sharing Project at <http://govinfo.kerr.orst.edu/>. The Government Information Sharing Project is one of the most straightforward and easy-to-use sites for accessing economic data. The site has a clickable map for zeroing in on the geographic area you are interested in and allows you to select and download data from the Economic Census, REIS, the *USA Counties* compendium, and the Decennial Census.

### **Geospatial and Statistical Data Center, University of Virginia**

A data access service that complements the Oregon State site is offered by the Geospatial and Statistical Data Center at the University of Virginia at <http://fisher.lib.Virginia.EDU/>. This site enables you to download data from REIS, County Business Patterns (at the two-digit level), and the *County and City Data Book*.

## Dismal Scientist

Despite the tongue-in-cheek name, this well-designed commercial Web site, at <http://www.dismal.com/regions/regions.stm>, is an excellent resource for analysts. Billing itself as the "best free lunch on the Web," Dismal Scientist provides an easy-to-use and frequently updated source of all kinds of economic data. The regional page enables you to easily produce state or metro-area rankings for dozens of socioeconomic variables such as job growth, unemployment, and migration. Also, this site is valuable for getting national data and linking to articles, analysis, and projections.

### **7.3 Data Directories**

The sites listed in the previous sections can help you obtain the most frequently used (and by consensus, most useful) data series on state and regional economies. But you may have a research question or interest that the well-known data sources don't address. The challenge becomes to find out what, if any, data can meet your needs. The sites listed in this third group provide comprehensive directories, with links, to help you to find some of the more specialized data sources.

## Resources for Economists on the Internet

Bill Goffe's Resources for Economists on the Internet (RFE), at [www.rfe.org](http://www.rfe.org), is the granddaddy of Web guides to economic data. The regional data on the RFE site can be found at <http://rfe.wustl.edu/USMacro/index.html>. However, the site's scope is much broader than local and state economies, and includes links to everything from on-line journals and data sets to collections of working papers to economist jokes. This site provides a scholarly, well-organized, and annotated index of Internet resources.

## FedStats

The Federal Interagency Council on Statistical Policy maintains the FedStats Web site, at <http://www.fedstats.gov/>, that provides links to the Web sites of over 70 federal data organizations. If you want to get a quick overview of what federal agencies provide what kinds of data, come here. You are best off checking out the Programs page, which gives a listing of agencies and data series by 14 data topics. Unfortunately, the Regional Statistics page does not provide a comprehensive listing of regional data series.

## Government Information Locator Service

Government Information Locator Service (GILS) – available at [http://www.access.gpo.gov/su\\_docs/gils/gils.html](http://www.access.gpo.gov/su_docs/gils/gils.html) – is a Web-based search engine specifically designed to find federal government data resources available through the Internet. You can search by subjects and keywords to find relevant data sources. Maintained by the Government

Printing Office, GILS is a great place to turn if you are looking for unusual or out-of-the-way information from the federal government.

### AUBER's Guide to State Economic Information

Chances are, somebody in your state has gathered data you want on your economy. As mentioned in Chapter 4, in the majority of states, one or more colleges and universities operate research centers that compile data on and research the state economy. Most of these centers are members of the Association for University Business and Economic Research (AUBER). You can find a state-by-state list of Web data sites maintained by members of AUBER at <http://www.auber.org/htmls/leapcomp.html>.

### Sources of Socioeconomic Data for Economic Development Analysis

This site, <http://www.econdata.net>, was compiled as part of the project that produced this *User's Guide*, and provides links to over 125 different federal, state, and private Web sites that provide regional socioeconomic data. Links are organized by source and topic.





## Chapter 8

### Seven Pitfalls of Data Analysis

While you can get a good picture of your local economy from the available data, our survey of data users showed that there are a number of problems and limitations that befall and befuddle analysts. Here are seven common pitfalls, some of which you may have encountered, others of which you may want to become aware.

#### **8.1 Series Breaks**

The biggest bugaboo in time series analysis is "series breaks" – changes in the way data are defined, classified, or collected from one time period to another. Many series breaks are an inevitable and unfortunate byproduct of attempts to improve our data. For example, if the Bureau of Labor Statistics (BLS) adopts a more accurate method for calculating labor force, the new data are not necessarily comparable with the old.

Data users are on the eve of a very major series break as the federal government abandons the Standard Industrial Classification (SIC) Code used to classify businesses according to the industry for the North American Industry Classification System (NAICS). NAICS will more accurately classify economic activity based on the way the economy now operates. However, federal agencies, for the most part, will not be going back and reclassifying historical data from SIC to NAICS (though they will provide one "bridge" year in which data are provided in both SIC and NAICS formats).<sup>9</sup> While many industries in the NAICS system are similar or identical to those in the SIC system, enough are different that analysts will have some difficulty in tracking industry data trends over time.

#### **8.2 Detail/Accuracy Tradeoff**

Many casual observers fail to realize that published socioeconomic data often are statistical estimates based on a population sample. Samples, rather than a full count, usually are carried out in order to save time and money. Familiar data series based on samples include those derived from the Current Population Survey, the long form of the Decennial Census, and the Current Employment Statistics (CES) Program.

For the nation as a whole, extremely accurate estimates can be generated by sampling a tiny fraction of the population. However, for geographic areas smaller than the nation, any particular point estimate is based on fewer observations and has a wider margin of uncertainty. In general, the greater the level of geographic detail, the less likely any point estimate is to be accurate. A similar observation can be made regarding industrial, occupational, racial, or other detail. To the extent possible, data users should be aware of

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<sup>9</sup> One exception – BLS indicates that it will be doing some reconstruction of major employment series in the Current Employment Statistics program, going back at least five years.

the confidence intervals in which points estimates lie.<sup>10</sup> Data agencies provide confidence intervals for most sample-based data series. In newer series, such as the Small Areas Income and Poverty Estimates Program and the American Community Survey (ACS), the Census Bureau explicitly publishes findings in terms of confidence intervals.

### **8.3 Confidentiality**

Most of the aggregate statistics reported by federal statistical agencies are based on reports and records from individual persons and businesses. By law, persons and businesses submitting surveys to government agencies, filling out Census forms and completing tax returns are guaranteed that the information submitted will be kept confidential. While confidentiality is not breached when data are aggregated in large groupings, there are levels of aggregation below which it is possible to discern information about a single individual or business. As a rule, most statistical agencies suppress the publication of information about businesses when an SIC category would include fewer than three firms or when the employment contribution of any single firm exceeds 80 percent of the total. In these cases, data are reported only at the next higher level of aggregation, say in the total for all manufacturing.

The smaller the geographic area, the more likely one is to run into the confidentiality problem. Few data points are suppressed at the national level, but many are suppressed or combined with other categories at the county level. As a result, when a single firm is the dominant force in an industry locally, it is often hard to get published data on that industry. One skill of effective data analysts is to develop a “ballpark” sense of suppressed industry data through using data that are available, such as data at the next higher level of industry and geographic aggregation, and business directories.

### **8.4 Time Lags**

A major frustration many data users face is getting timely data. Analysts and decision makers want access to data as current as possible. However, the process of collecting, collating, analyzing, and disseminating data is time consuming. Moreover, while federal data agencies quickly release national data (e.g., unemployment statistics, numbers of new jobs), they provide state and regional data more slowly. As a result, regional data analysts face lags of weeks (monthly local unemployment rates), months (annual employment by industry for counties), and years (Economic Census, County Business Patterns) in getting data. Moreover, beyond any time lag in publication, certain data series, such as the Decennial Census and the Economic Census, come out relatively infrequently, causing the analyst to rely on data that may be significantly out of date.

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<sup>10</sup> A confidence interval is a measure of the statistical likelihood that the true point lies within a particular range. For instance, a 90 percent confidence interval of 4.5-5.0 percent unemployment indicates a 90 percent likelihood that the actual unemployment rate is within the range specified.

To demonstrate the issue of time lags, we've prepared the following table, which shows the most recent data available for various popular data series.

**Most Recent Data Availability for Major Data Series, as of December 1998**

Series	State	Substate
County Business Patterns		1996
Decennial Census		1990
Economic Census		1992
ES-202 Covered Employment	Annual – 1996 or 1997, varies by state	
CES/BLS-790	November, 1998	October, 1998
Local Area Unemployment Statistics	November, 1998	October, 1998
REIS Personal Income	1997	1996

### 8.5 Differing Definitions and Methods

Analysts report that one of their most valued skills is the ability to work with disparate sources of data. Analyzing a local economy is a bit like making a patchwork quilt, it requires piecing together bits of information from any number of sources. And like quilt-making, sometimes things don't match up too well. One particular problem is that seemingly similar concepts are defined and applied differently in different data series, producing apparently conflicting results. Another problem is that, while the definition may be the same, the collection methodology and the results differ. Employment data series provide the largest number of data conflicts due to differences in definitions and methodologies. You can get dramatically different estimates of the number of people working in an area depending on whether you use ES-202 data, Local Area Unemployment Statistics (LAUS) data, CES data, County Business Patterns, or Regional Economic Information System (REIS) data. To demonstrate, we offer the estimates for Multnomah County, Oregon from each of these sources for calendar year 1995 (except for CES, which is not available at the county level).

**Estimates of Employment in Multnomah County, Oregon  
Calendar Year 1995, by Various Sources**

Source	Employment Measure	Estimate
Bureau of Economic Analysis, REIS (CA-25)	Total Full- and Part-Time Employment Annual Average	511,950
Bureau of Economic Analysis, REIS (CA-27)	Wage & Salary Employment Annual Average	445,434
Oregon Employment Department, ES-202	Covered Employment, Annual Average	415,100
Census, County Business Patterns	Employees, Week of March 12	367,961
Oregon Employment Department, LAUS	Resident Employment, Annual Average	334,750

If asked how many people work in Multnomah County, Oregon, how would you answer? Depending on which series you chose, you could say anywhere from less than 350,000 to more than half a million. None of these measures are wrong, they're all just measuring slightly different things. The most important distinction is between the LAUS definition of employment (which is place-of-residence) and the others (all place-of-work). Because Multnomah County is the central county in a metropolitan region, it has many commuters from surrounding suburban counties, which explains why more people work in the county than reside there.

The three place-of-work data series vary because they count slightly different groups. County Business Patterns excludes all workers not subject to FICA reporting requirements, which leaves out government workers, railroad employees and most agricultural workers. ES-202 counts only those workers subject to state unemployment insurance laws, again omitting agricultural workers. The wage and salary employment number from the Bureau of Economic Analysis (BEA) is somewhat broader. BEA's estimate of total employment includes farm and nonfarm proprietors. For metro areas and states, CES employment data will differ from the others both because of definition and methodology (based on a survey rather than a count).

The range of employment data above provides just one example of the challenges of differing definitions and methodologies for data analysis. Other instances seen in this guide include differing definitions for income (BEA personal income, Census money income) and exports (Census EL and OM series), and differing methodologies for unemployment (LAUS, Geographic Profile, ACS), population characteristics (Population Estimates Program, CPS), money income (CPS, Small Area Income and Poverty Estimates Program, ACS), and hourly wages (CES, National Compensation Survey, Occupational Employment Statistics). So in order to be able to use and interpret data effectively, it's vital to know how data are gathered, and what they are measuring.

## **8.6 Revisions**

Another maddening tradeoff analysts confront is the tension between timeliness and revisions. For some data series, statistical agencies make extra efforts to produce quick estimates of economic data. Using the information that can be gathered easily and quickly (often partial information from a sample of subject workers, firms, or households) they work to generate an estimate in the shortest possible time. Later, as fuller information becomes available, these early estimates are revised. Often, whole series of estimates (e.g., ES-202, personal income) are revised to incorporate newly available data, to conform subarea estimates to state or national totals, or to address methodological or definitional changes. Keeping track of revisions is an ongoing chore for many analysts.

### **8.7 Microbusinesses and the Self-Employed**

One of the aspects of economic development hardest to track is the increasing role that self-employed, sole-proprietor businesses with no employees play in the economy. With corporate downsizing, and the advent of personal computers and advanced telecommunications technology, many more people are working as self-employed contractors and consultants, often out of their homes. Because so much of the federal statistical system is geared to gathering data about wage and salary employment, these workers fly below the radar of many statistical series. You won't find self-employed workers, for example, in ES-202 records, CES, or County Business Patterns. Estimates of proprietorships are part of REIS, and the self-employed are counted as employed through the LAUS Program. In general, though, it can be very challenging to estimate the number of self-employed workers, particularly for small areas and by industry.

Our ability to track sole proprietors is especially important because self-employment is increasing much faster than wage and salary employment. For example, between 1990 and 1995, the number of nonfarm proprietorships in the U.S. increased by 8.7 percent while the number of nonfarm wage and salary employees increased only 3.3 percent. Nationwide, more than 22 million nonfarm proprietorships exist.



## Chapter 9

### Advanced Analysis: Power Tools for Data

For the most part, we've focused on the basic tools for describing and analyzing local and regional economies. Experience shows that you'll get a lot of mileage out of these methods. However, certain issues and questions may require more detailed and sophisticated analysis, requiring advanced techniques.

In comparison with the basic tools, certain advanced techniques can require much more effort to obtain and manipulate the data, as they do not use "off-the-shelf" data. In some instances, the data supplying agencies must do custom computer runs of their databases, usually for a fee to recover the costs of programming and checks to protect confidentiality.

#### 9.1 Microdata Analysis

Most data that regional analysts utilize are aggregate figures, for example, total employment for an industry in a state. While aggregate data are useful for many purposes, they do have limitations. For instance, data users are stuck with the categories chosen by the person or agency providing the data. If you want to analyze data through your own categories, you need to have access to the individual records, or microdata, from which the aggregate totals were computed.

Getting access to microdata is difficult, due to the cost of working with thousands or millions of records and the need to protect confidentiality. For many types of microdata records, such as Census surveys and tax files, information linked to named persons or businesses legally cannot be released.

However, you can get access to certain Census Bureau microdata on individuals, with identifying information stripped out. The Census Bureau sells CD-ROMs and computer tapes of Public Use Microdata Samples (PUMS) from the Decennial Census (one-percent and five-percent samples), the American Housing Survey (AHS), the Current Population Survey (CPS), and the Survey of Income and Program Participation (SIPP). Geographic identifiers are retained, so you can examine microdata for particular areas. You can find out more about Census microdata files by calling (301) 457-4100. You also can download Census microdata via the Internet:

- Federal Electronic Research and Review Extraction Tool (FERRET) provides on-line access to microdata from the CPS, SIPP, and the National Health Interview Survey. FERRET is a joint effort of the Census Bureau and the Bureau of Labor Statistics. (<http://ferret.bls.census.gov/>)
- Data Extraction System (DES) is an on-line service that provides access to a variety of Census microdata, including PUMS data from the Decennial

Census, the AHS, and the CPS. (<http://www.census.gov/DES/www/welcome.html>)

- Soon, PUMS data for the Decennial Census and the ACS will be accessible through a new user-friendly service, American FactFinder. (<http://www.census.gov/dads/www/>)

One of the most valuable sources of microdata about firms in any state is the ES-202 data file – the payroll tax records of firms subject to state and federal unemployment insurance taxes. This database includes every covered firm's employment and payroll, SIC code, and address, which makes it a tremendous resource for microdata analysis of industry trends and characteristics. The ES-202 database is also extremely useful for applications that involve the mapping of data or efforts to look at subcounty distributions of economic activity. Also, with the ES-202 file, one can reaggregate data using the finer classification of firms reflected by their four-digit SIC codes (most published substate level data about industry is available only at the two-digit level).

ES-202 data are gathered by your state labor market information (LMI) agency. Each state has its own combination of laws and policies governing access to these data, and pricing for providing microdata to eligible users. Access policies vary significantly by state. Some states make the data available to a wide range of users, public and private. Others effectively prohibit access to firm-level data. To find out your state's policy on access to microdata, contact your state LMI agency representative listed in Appendix B.

Manipulating microdata generally requires more computing power and more sophisticated techniques that one uses with aggregate data. To manipulate microdata, you'll probably want a database program (such as Borland's Paradox, Lotus Approach, or Microsoft Access) or a statistical analysis program (such as SPSS or SAS). Each of these programs is capable of manipulating very large data sets.

## **9.2 Longitudinal Analysis**

Longitudinal analysis is an extension of the techniques of microdata analysis. While basic microdata analysis involves looking at a snapshot of data at a specific time, longitudinal analysis examines data on individual persons or businesses over a time period. One common use of longitudinal analysis for economic development is the study of business creation and survival rates. Longitudinal analysis enables you to identify trends in firm contribution to job growth and job loss over time, including the relative contributions of business start-ups, failures, closures, expansions and contractions to net job growth.

If you have direct access to firm-level microdata for a number of years, you can do this kind of longitudinal analysis yourself. (A critical issue here is the ability to connect records for one firm to the comparable record for the same firm in later years). Another approach is to contract with the data agency to perform this analysis on your behalf.



The Census Bureau, for example, will prepare customized longitudinal analyses of firm and establishment changes in employment.

- The Center for Economic Studies provides analysis of manufacturing establishment microdata collected through the Census of Manufactures and the Annual Survey of Manufactures. The Center's database is longitudinal, so it can track characteristics of particular establishments over time. The Center is in the process of building a longitudinal file of all Economic Census microdata. You can view the Center's Web site at <http://www.census.gov/ces/ces.html>, or call (301) 457-1825.
- Statistics of U.S. Business is a Census unit that provides analysis, on a reimbursable basis, of the corporate and establishment microdata file that serves as the data source for County Business Patterns. The database was created with the help of the Small Business Administration and covers the years 1989-95. Customized tabulations of data can be prepared for geographic areas to the county level, and for the two-, three- or four-digit level of SIC code detail (subject to confidentiality restrictions). Variables also can include firm size (employees and receipts) and form of legal organization (corporation, partnership, or sole-proprietorship). You can visit the Statistics of U.S. Business Web site at <http://www.census.gov/epcd/www/sb001.html>. You can get more information by calling (301) 457-8641, or sending email to [busstat@census.gov](mailto:busstat@census.gov).

### **9.3 Input/Output Analysis and Impact Studies**

Often, public decision makers and leaders want to know the economic impacts of major projects or economic events, like the construction of a new plant or the closure of a military base. Because such events produce changes in business and household spending that spread through the entire local economy, it is necessary to have a good idea of the patterns of intersectoral linkages.

The economy-wide impacts of actual or possible events can be determined through input-output analysis. An input-output table is one large matrix that shows the nature of the interrelationships between various economic sectors, and how changes in one sector will affect others and the economy as a whole.

The expense of creating a regional input-output matrix from scratch is prohibitive. Thus, analysts are better off purchasing input-output tables from people who do this for a living.

- The Bureau of Economic Analysis (BEA) will prepare a customized estimate of regional input output multipliers for any region composed of one or more counties. The BEA model for creating regional multipliers, called RIMS II (Regional Input-Output Modeling System II), has been used for more than a decade for evaluating the impacts of developments.

RIMS II multipliers cost \$600 per county or group of counties modeled. More information about RIMS II is available on the Web at <http://www.bea.doc.gov/bea/rims/rims-1.htm>. For further information or to place an order, call (202) 606-5343 or e-mail [rimsread@bea.doc.gov](mailto:rimsread@bea.doc.gov).

- In addition to BEA's input-output models, two private companies develop customized regional input-output models. IMPLAN, located in Stillwater, MN, maintains a Web site at <http://www.implan.com/index2.htm> and can be reached at (651) 439-4421 or [sales@implan.com](mailto:sales@implan.com). Regional Economic Models, Inc., (REMI) is located in Amherst, MA. REMI's Web site is <http://www.remi.com/> and the firm can be reached at (413) 549-1169 or [remi@crocker.com](mailto:remi@crocker.com).

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## Appendix A

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[george@upa.pdx.edu](mailto:george@upa.pdx.edu)

### PENNSYLVANIA

Diane Shoop  
Pennsylvania State Data Center  
Institute of State & Regional Affairs  
Pennsylvania State Univ. - Harrisburg  
777 West Harrisburg Pike  
Middletown, PA 17057-4898  
(717) 948-6336 fax -6306  
[des102@psuvm.psu.edu](mailto:des102@psuvm.psu.edu)

### PUERTO RICO

Lillian Torrez Aguirre  
Junta de Planificacion  
Centro Gubernamental Minillas  
Box 41119  
San Juan, PR 00940-1119  
(809) 728-4430 fax 268-0506

### RHODE ISLAND

Paul Egan  
Department of Administration  
Office of Municipal Affairs  
One Capitol Hill  
Providence, RI 02908-5873  
(401) 277-6493 fax -3809

### SOUTH CAROLINA

Mike MacFarlane  
Division of Research & Statistical Services  
South Carolina Budget & Control Board  
Rembert Dennis Building  
Room 425  
Columbia, SC 29201  
(803) 734-3780 fax -3619

### SOUTH DAKOTA

Theresa Bendert  
Business Research Bureau  
University of South Dakota  
School of Business  
414 East Clark  
Vermillion, SD 57069  
(605) 677-5287 fax -5427  
[tbendert@charlie.usd.edu](mailto:tbendert@charlie.usd.edu)

### TENNESSEE

Betty Vickers  
Tennessee State Data Center  
100 Blocker Business Building  
Center for Business & Economic Research  
University of Tennessee, Knoxville  
Knoxville, TN 37996-4170  
(423) 974-6080  
[bvickers@utk.edu](mailto:bvickers@utk.edu)

### TEXAS

Dr. Steve Murdock  
Department of Rural Sociology  
Texas A&M University System  
Special Services Building  
College Station, TX 77843-2125  
(409) 845-5115/5332 fax -8529

## *Appendix A: Census State Data Centers*

### UTAH

David Abel  
Office of Planning & Budget  
State Capitol, Room 116  
Salt Lake City, UT 84114  
(801) 538-1036 fax -1036  
[dabel@email.state.ut.us](mailto:dabel@email.state.ut.us)

### VERMONT

Sybil McShane  
Vermont Department of Libraries  
109 State Street  
Montpelier, VT 05609-0601  
(802) 828-3261 fax -2199

### VIRGIN ISLANDS

Frank Mills  
University of the Virgin Islands  
Eastern Caribbean Center  
No. 2 John Brewer's Bay  
Charlotte Amalie  
St. Thomas, VI 00802  
(809) 693-1027 fax -1025

### VIRGINIA

Don Lillywhite  
Virginia Employment Commission  
703 East Main Street  
Richmond, VA 23219  
(804) 786-8026 fax -7844

### WASHINGTON

Yi Zhao  
Forecasting Division  
Office of Financial Management  
450 Insurance Building  
Box 43113  
Olympia, WA 98504-3113  
(206) 586-2504 fax 664-8941

### WEST VIRGINIA

Delphine Coffey  
Office of Community & Industrial Development  
Capitol Complex  
Building 6, Room 553  
Charleston, WV 25305  
(304) 558-4010 fax -3248

### WISCONSIN

Robert Naylor  
Department of Administration  
Demographic Services Center  
101 East Wilson Street, 6th Floor  
Box 7868  
Madison, WI 53707-7868  
(608) 266-1927 fax 267-6931  
[naylor@mail.state.wi.us](mailto:naylor@mail.state.wi.us)

### WYOMING

Wenlin Liu  
Department of Administration & Information  
Economic Analysis Division  
Emerson Building 327E  
Cheyenne, WY 82002-0060  
(307) 777-7504 fax -5852

## Appendix B

### State Labor Market Information Agencies

December 1998

For update, contact <http://www.bls.gov/ofolist.htm>

#### ALABAMA

Alabama Department of Industrial Relations  
Labor Market Information Division  
Industrial Relations Building, Room 427  
Montgomery, AL 36131-2280  
(334) 242-8863 fax -2543  
<http://www.dir.state.al.us/alalmi.htm>

#### ALASKA

Alaska Department of Labor  
Research and Analysis Section  
P.O. Box 25501  
Juneau, AK 99802-5501  
(907) 465-4500 fax -2101  
<http://www.labor.state.ak.us/research/research.htm>

P.O. Box 107018  
Anchorage, AK 99510-7018  
(907) 269-4860 fax -4870

#### ARIZONA

Arizona Department of Economic Security  
Division of Employee Services and Support  
Research Administration  
PO Box 6123  
Phoenix, AZ 85005  
(602) 542-3871 or (800)-321-0381  
Outside Arizona (800)-827-4966  
fax (602) 542-6474  
<http://www.de.state.az.us/research/rahmpg.html>

#### ARKANSAS

Arkansas Employment Security Department  
PO Box 2981  
#2 Capitol Mall, Room G10  
Little Rock, AR 72203  
501)682-3198 fax -3144  
<http://www.state.ar.us.esd/labormar.html>

#### CALIFORNIA

California Employment Development  
Department  
Labor Market Information Division  
7000 Franklin Blvd, Bldg 1100  
Sacramento, CA 95823  
(916) 262-2116 automated -2162  
fax -2443  
<http://www.calmis.ca.gov/>

#### COLORADO

Colorado Department of Labor and Employment  
Labor Market Information  
1515 Arapahoe Street, Tower 2, Suite 300  
Denver, CO 80202-2117  
(303) 620-4856 fax -4988  
<http://lmi.cdle.state.co.us/pubs.htm>

#### CONNECTICUT

Connecticut Department of Labor  
Office of Research  
Employment Security Division  
200 Folly Brook Blvd  
Wethersfield, CT 06109  
(860) 263-6275 fax -6263  
<http://www.ctdol.state.ct.us/lmi/misc/lmi.htm>

#### DELAWARE

Delaware Department of Labor  
Office of Occupational & Labor Market  
Information  
P.O. Box 9965, Suite 349  
4425 North Market Street  
Wilmington, DE 19809-0965  
(302) 761-8050 fax -6598  
In Dover:  
(302) 739-4271 fax -5749  
<http://www.oolmi.net/>

#### DISTRICT OF COLUMBIA

D.C. Department of Employment Services  
Labor Market Information Division  
500 C Street, N.W., Suite 201  
Washington, DC 20001  
(202) 724-7213 fax -7216  
<http://does.ci.washington.dc.us/lmi.html>

#### FLORIDA

Florida Department of Labor and Employment  
Security  
Bureau of Labor Market & Performance  
Information  
200 Hartman Building  
2012 Capital Circle, S.E.  
Tallahassee, FL 32399-2151  
(850) 488-1048 fax 921-0776  
<http://lmi.floridajobs.org>

## *Socioeconomic Data: A User's Guide*

### GEORGIA

Georgia Department of Labor  
Labor Information Systems  
Sussex Place  
148 International Boulevard, N.E.  
Atlanta, GA 30303-1751  
(404) 656-3177 fax 651-9568  
<http://www.dol.state.ga.us/lmi/>

### HAWAII

Hawaii Department of Labor and Industrial  
Relations  
Research and Statistics Office  
830 Punchbowl Street, Room 304  
Honolulu, HI 96813  
(808) 586-8999 fax -9022  
<http://www.hawaii.gov/workforce/>

### IDAHO

Idaho Department of Labor  
Research and Analysis  
317 West Main Street, 3rd floor  
Boise, ID 83735  
(208) 334-6170 fax -6455  
<http://www.labor.state.id.us/lmi/>

### ILLINOIS

Illinois Department of Employment Security  
Economic Information and Analysis Division  
401 State Street 7 North  
Chicago, IL 60605  
(312) 793-2316 fax - 2192  
<http://lmi.ides.state.il.us>

### INDIANA

Indiana Department of Workforce Development  
IGES – E 211  
10 North Senate Avenue  
Indianapolis, IN 46204-2277  
(317) 232-7460 fax 333-6699  
<http://www.dwd.state.in.us>

### IOWA

Iowa Workforce Development  
Research and Information Services  
1000 E. Grand Ave.  
Des Moines, IA 50319  
(515) 281-8181 fax -8195  
<http://www.state.ia.us/government/wd/ris/lmi/index.html>

### KANSAS

Kansas Department of Human Resources  
LMI Services  
401 SW Topeka Blvd.  
Topeka, KS 66603-3182  
(913) 296-5058 fax -5286  
<http://laborstats.hr.state.ks.us/>

### KENTUCKY

Department for Employment Services  
Workforce Development Cabinet  
Labor Market Information Section  
275 East Main Street, Second Floor, CHR Bldg.  
Frankfort, KY 40621  
(502) 564-7976 fax -2937  
<http://www.des.state.ky.us/agencies/wforce/des/lmi/lmi.htm>

### LOUISIANA

Louisiana Department of Labor  
PO Box 94094  
1001 N. 23<sup>rd</sup> Street  
Baton Rouge, LA 70804-9094  
(504) 342-3140 fax -9192  
<http://www.ldol.state.la.us/statpage.htm>

### MAINE

Division of Labor Market Information Services  
Maine Department of Labor  
20 Union Street  
Augusta, ME 04330  
(207) 287-2271 fax -2947  
<http://www.state.me.us/labor/lmis/maine.html>

### MARYLAND

Maryland Dept. of Labor, Licensing, and  
Regulation  
Office of Labor Market Analysis & Information  
1100 North Eutaw Street, Room 601  
Baltimore, MD 21201  
(410) 767-2250 fax -2219  
<http://www.dllr.state.md.us/lmi/index.htm>

### MASSACHUSETTS

Massachusetts Division of Employment &  
Training  
Economic Research, 2<sup>nd</sup> Floor  
19 Staniford St.  
Boston, MA 02114  
(617) 626-6556 fax 727-5981  
<http://www.detma.org/lmiinfo.htm>

## *Appendix B: State Labor Market Information Agencies*

### MICHIGAN

Michigan Jobs Commission – Employment  
Service Agency  
Office of Labor Market Information  
7310 Woodward Avenue, Room 520  
Detroit, MI 48202  
(313) 876-5427 fax -5587  
<http://www.michlmi.org>

### MINNESOTA

Minnesota Department of Economic Security  
Research and Statistics Office  
390 North Robert Street  
St. Paul, MN 55101  
(888) 234-11147 fax (651) 282-5429  
<http://www.des.state.mn.us/lmi>

### MISSISSIPPI

Mississippi Employment Security Commission  
Labor Market Information Division  
Post Office Box 1699  
Jackson, MI 39215-1699  
(601) 961-7424 fax -7448  
<http://www.mesc.state.ms.us/lmi/index.html>

### MISSOURI

Department of Labor & Industrial Relations  
Research and Analysis  
421 E. Dunklin, P.O. Box 59  
Jefferson City, MO 65104  
(314) 751-3595 fax -7160  
<http://www.works.state.mo.us/lmi/index.htm>

### MONTANA

Department of Labor and Industry  
Research and Analysis  
P.O. Box 1728  
Helena, MT 59624  
(406) 444-2430 fax -2638  
<http://jsd.dli.state.mt.us/lmi/lmi.htm>

### NEBRASKA

Nebraska Department of Labor  
Division of Employment  
Labor Market Information  
P.O. Box 94600  
Lincoln, NE 68509-4600  
(402) 471-2600 fax -9867  
<http://www.dol.state.ne.us/nelmi.htm>

### NEVADA

Nevada Department of Employment, Training &  
Rehabilitation  
Information Development & Processing Division  
Research & Analysis Bureau  
500 E.Third Street  
Carson City, NV 89713  
(775) 687-4550 fax -1063  
<http://www.state.nv.us/detr/lmi/>

### NEW JERSEY

New Jersey Department of Labor  
Division of Labor Market and Demographic  
Research  
PO Box 383  
Trenton NJ 08625  
(609) 292-0099 fax 777-3623  
<http://www.state.nj.us/labor/lra>

### NEW HAMPSHIRE

Economic & Labor Market Information Bureau  
New Hampshire Department of Employment  
Security  
32 South Main Street  
Concord, NH 03301  
(603) 228-4123 fax -4172  
<http://www.nhes.state.nh.us/lmipage.htm>

### NEW MEXICO

New Mexico Department of Labor  
401 Broadway, 1st Floor  
PO Box 1928  
Albuquerque, NM 87103  
(505) 841-8647 fax -9007  
[http://www3.state.nm.us/dol/dol\\_lmif.html](http://www3.state.nm.us/dol/dol_lmif.html)

### NEW YORK

New York Department of Labor  
Division of Research and Statistics  
State Building 12, Room 490  
Albany NY 12240  
(518) 457-3801 fax 485-6199  
<http://www.labor.state.ny.us>

### NORTH CAROLINA

Labor Market Information Division  
Employment Security Commission of North  
Carolina  
Post Office Box 25903  
Raleigh, NC 27611  
(919) 733-2936 fax -8662  
<http://www.esc.state.nc.us/html/lmi.html>

## *Socioeconomic Data: A User's Guide*

### NORTH DAKOTA

Job Service North Dakota  
Research and Statistics  
P.O. Box 5507  
Bismarck, ND 58506-5507  
(701) 328-2868 fax -4193  
<http://www.state.nd.us/jsnd/lmi2.htm>

### OHIO

Ohio Bureau of Employment Services  
Labor Market Information Division  
145 South Front Street  
Columbus, OH 43215-1618  
(614) 752-9494 fax -9621  
<http://lmi.state.oh.us/>

### OKLAHOMA

Oklahoma Employment Security Commission  
Will Rogers Memorial Office Building, 4<sup>th</sup> flr.  
Oklahoma City, OK 73105  
(405) 557-7265 fax 525-0139  
<http://www.oesc.state.ok.us/lmi/default.htm>

### OREGON

Oregon Employment Department  
875 Union Street, N.E., Room 207  
Salem, OR 97311  
(503) 947-1266 fax -1210  
<http://olmis.emp.state.or.us/>

### PENNSYLVANIA

Department of Labor & Industry  
Bureau of Research and Statistics  
L & I Building, Room 220  
Seventh & Forster Streets  
Harrisburg, PA 17121-0001  
(717) 787-3266 fax 772-2168  
<http://www.lmi.state.pa.us/>

### PUERTO RICO

Dept. of Labor and Human Resources  
Bureau of Labor Statistics  
505 Muñoz Rivera Ave –20<sup>th</sup> floor  
Hato Rey, PR 00918  
(809) 754-5385 fax 751-7934  
[http://www.interempleo.org/lmi\\_english/fr\\_stat.htm](http://www.interempleo.org/lmi_english/fr_stat.htm)

### RHODE ISLAND

Labor Market Information  
Department of Labor and Training  
101 Friendship Street  
Providence, RI 02903-3740  
(401) 222-3730 fax -2731  
<http://www.dlt.state.ri.us/webdev/lmi/lmihome.html>

### SOUTH CAROLINA

South Carolina Employment Security  
Commission  
Labor Market Information Division  
Post Office Box 995  
Columbia, SC 29202  
(803) 737-2660 fax -2838  
<http://www.sces.org/lmi/index.htm>

### SOUTH DAKOTA

South Dakota Department of Labor  
LMI Division  
420 S. Roosevelt St.  
Aberdeen, SD 57401-5131  
(605) 626-2314 fax -2322  
<http://www.state.sd.us/dol/lmic/lmihp.htm>

### TENNESSEE

Tennessee Department of Employment Security  
Research and Statistics Division  
Davy Crockett Tower, 11th floor  
500 James Robertson Pkwy  
Nashville, TN 37245-1000  
(615) 741-2284 fax 532-9434  
<http://www.state.tn.us/empsec/lmi.htm>

### TEXAS

Texas Workforce Commission  
9001 North IH 35  
Suite 103A  
Austin, TX 78753  
(512) 491-4802 fax -4904  
<http://www.twc.state.tx.us/lmi/lmi.html>

### UTAH

Utah Department of Employment Security  
LMI Division  
140 East 300 South  
Salt Lake City, UT 84111  
(801) 526-9401 fax -9239  
<http://www.state.ut.us/html/employment.htm>

### VERMONT

Research and Analysis  
Department of Employment & Training  
PO Box 488  
Montpelier, VT 05601-0488  
(802) 828-4202 fax -4050  
<http://www.det.state.vt.us/~detlmi/lmihp.htm>

## *Appendix B: State Labor Market Information Agencies*

### **VIRGINIA**

Virginia Employment Commission  
Economic Information Services Division  
P.O. Box 1358  
Room 328  
703 East Main Street  
Richmond, VA 23218-1358  
(804) 786-7496 fax -7844  
<http://www.vec.state.va.us/lbrmkt/lmi.htm>

### **VIRGIN ISLANDS**

Virgin Islands Bureau of Labor Statistics  
P.O. Box 303359  
St. Thomas, VI 00803  
(340) 776-3700 ext. 2034 fax 774-5908  
<http://www.vidol.org>

### **WASHINGTON**

Washington Employment Security Department  
Labor Market and Economic Analysis Branch  
P O Box 9046  
Olympia, WA 98507-9046  
(360) 438-4804 fax -4846  
<http://www.wa.gov/esd/lmea/>

### **WEST VIRGINIA**

West Virginia Bureau of Employment Programs  
Labor Market Information  
Research, Information, & Analysis Division  
112 California Avenue  
Charleston, WV 25305  
(304) 558-2660 fax -0301  
<http://www.state.wv.us/bep/lmi/default.htm>

### **WISCONSIN**

Wisconsin Department of Workforce  
Development  
Bureau of Workforce Information  
201 E. Washington Ave.  
Madison, WI 53702  
(608) 266-2930 fax -5887  
<http://www.dwd.state.wi.us/dwelmi/>

### **WYOMING**

Department of Employment  
Research and Planning  
P.O. Box 2760  
Casper, WY 82602  
(307) 473-3801 fax -3806  
<http://wyjobs.state.wy.us/lmi/rphome.htm>





## Appendix C

### National and Regional Associations with Interests in Economic Development

December 1998

American Chamber of Commerce Executives  
4232 King St.  
Alexandria, VA 22302  
(703) 998-0072 fax 931-5624  
<http://www.acce.org/>

American Chamber of Commerce Researchers Association  
4232 King Street  
Alexandria, VA 22302  
(703) 998-0072 fax 931-5624  
<http://www.accra.org>

American Economic Development Council  
9801 West Higgins Road, Suite 540  
Rosemont, IL 60018-4726  
(847) 692-9944 fax 696-2990  
<http://www.aedc.org>

American Planning Association  
122 South Michigan Ave., Suite 1600  
Chicago, IL 60603  
(312) 431-9100 fax -9985  
<http://www.planning.org>

Association of Public Data Users  
Patricia J. Conner, Chief Administrator  
Division of Business and Economic Research  
University of New Orleans  
New Orleans, LA 70148  
(504) 280-3154 fax -6094  
<http://www.apdu.org>

Association for University Business & Economic Research  
College of Business Administration  
Northeast Louisiana University  
Monroe, LA 71209-0101  
(318) 342-1215  
<http://www.auber.org>

California Association for Local Economic Development  
1010 F Street, Suite 100  
Sacramento, CA 95814-0836  
(916) 448-8252 fax -3811  
<http://www.caled.org>

Community Development Society  
1123 N. Water Street  
Milwaukee, WI 53202  
(414) 276-7106 fax -7704  
<http://www.comm-dev.org/>

Council for Urban Economic Development  
1730 K Street, NW, Suite 700  
Washington, DC 20006  
(202) 223-4735 fax -4745  
<http://www.cued.org>

Council of Professional Associations on Federal Statistics  
1429 Duke Street, Suite 402  
Alexandria, VA 22314-3415  
(703) 836-0404  
<http://members.aol.com/COPAFS/index.htm>

Mid-America Economic Development Council  
St. Paul, MN  
(612) 290-6296/6278 fax -2266

The Modernization Forum  
20501 Ford Road  
Dearborn, MI 48128  
(313) 271-2790 fax -2791  
<http://www.modforum.org>

National Association for Business Economics  
1233 20th Street, NW, Room 505  
Washington, DC 20036  
(202) 463-6223 fax -6239  
<http://www.nabe.com>

National Association for County Community and Economic Development  
1200 19th St., NW, Suite 300  
Washington, DC 20036  
(202) 429-5118 fax 857-1111  
<http://www.nacced.org/>

## *Socioeconomic Data: A User's Guide*

National Association of Development  
Organizations  
444 North Capitol Street, NW  
Suite 630  
Washington, DC 20001  
(202) 624-7806 fax -8813  
<http://www.nado.org>

National Association of Regional Councils  
1700 K Street, NW, Suite 1300  
Washington, DC 20006  
(202) 457-0710 fax 296-9352  
<http://www.narc.org>

National Association of State Development  
Agencies  
750 First Street, NE, Suite 710  
Washington, DC 20002  
(202) 898-1302 fax -1312  
<http://www.nasda.com>

National Conference of State Legislatures  
1560 Broadway, Suite 700  
Denver, CO 80202  
(303) 830-2200  
<http://www.ncsl.org>

National Congress for Community Economic  
Development  
1030 15th Street, NW  
Suite 325  
Washington, DC 20005  
(202) 234-5009 fax -4510  
<http://www.ncced.org>

National League of Cities  
1301 Pennsylvania Avenue, NW  
Suite 550  
Washington, DC 20004-1763  
(202) 626-3000 fax -3043  
<http://www.nlc.org>

Northeast Economic Developers Association  
PO Box 968  
Elkton, MD 21922  
(410) 620-1965 fax -1979  
<http://www.nida.org>

Regional Science Association International  
University of Illinois  
901 S. Mathews  
Urbana, IL 61801-3682  
(217) 333-8904 fax -3065  
<http://rsai.geography.ohio-state.edu/rsai/homepage.htm>

Science and Technology Council of the States  
c/o State Science and Technology Institute  
751 Northwest Blvd., Suite 305  
Columbus, OH 43212  
(614) 421-SSTI (7784) fax -9123  
<http://www.ssti.org>

Southern Economic Development Council  
229 Peachtree St., NE, Suite 1008  
Atlanta, GA 30303  
(404) 523-3030  
<http://www.sedc.org>